tissues were shown to be malignant by microscopic examination, and two in which the diagnosis of malignancy was clinical but unquestionable; 80 per cent. of the cases at least were therefore cancer. There were twelve patients in whom the diagnosis was "benign"; eight of which were microscopic, and four clinical diagnoses. Four of these patients have since suffered with recurrences which have been shown to be malignant, and in another case one portion of the tumor removed suggests a beginning malignancy, leaving only seven cases, or 15 per cent., continuously benign.

*Character of Operation.*—These forty-seven cases, in which suprapubic excision of the tumor was carried out, may be divided into three groups according to the extent of the operation performed.

*Group 1. Excision with pedicle and a portion of the vesical mucosa, twenty-three cases.* The operation here consisted generally in exposing the tumor by long median suprapubic incision and excellent retraction, every effort being made not to touch or disturb the tumor, which in some cases was first cauterized with hot-air cautery or with resorcin to kill the surface and prevent implantations, and then clamped across its pedicle close to the bladder, traction applied and one or more clamps placed across the pedicle higher up so as to include normal vesical mucous membrane; division of the pedicle below the deepest clamp by means of the Paquelin cautery, and hemostasis by means of clamps which were sometimes ligated, and sometimes left in place. Often the vesical wound, left after removal of the tumor, was thoroughly cauterized with the Paquelin cautery. Among these twenty-three cases there were only nine benign. Four of the benign afterward showed malignancy and one patient died of embolism soon after operation, thus leaving four benign cases, in one of which the patient suffered from an extensive benign recurrence; one patient has been lost sight of, and two have been cured now for four years each.

The results obtained in these nine benign cases are extremely bad, not nearly so good as is now obtained by fulguration, and they show in a striking way the inadequacy of the suprapubic excision even when great care is taken to avoid implantations, and to thoroughly remove the tumor after clamping its pedicle. One of the two cases, in which the patient is now well four years after operation, is extremely interesting in that it was one of the most unpromising cases of all, the bladder being almost completely filled with papillomas.

These were destroyed by a Paquelin cautery through a suprapubic incision, very little normal mucous membrane being left.

Microscopic examination of tumors showed all to be typically benign papillomas, except the largest specimen, in which an area suggesting early malignant changes was present. This case shows in a striking way the value of the cautery and probably also of resorcin in preventing vesical recurrences and prevesical implantations in cases of multiple papillomatosis.

*Malignant Cases.—There were fourteen cases* in Group 1 which were shown to be malignant, and in only two has the operation resulted in a cure.

Case 2.—A. S., aged 47, No. 21035, had a large papilloma about the size of an orange with its pedicle near the left ureteral orifice. It was clamped and excised with an area of mucous membrane, July 26, 1907. Patient writes under date of June 13, 1913, (six years later) that he is entirely well. Microscopic examination revealed an infiltrating papillary carcinoma.

Case 3.—The third case is quite remarkable. G. L. A., aged 69, admitted May 11, 1911, complaining of difficulty and frequency of urination and pain in the bladder, for several weeks had been treated at home by perineal exposures to the Roentgen ray with a view of curing the prostatic obstruction Examination showed an enlarged prostate, and a large red fissured rough tumor springing from a pedicle external to the right ureter. Suprapubic operation was performed May 19 1911. The tumor was found to be necrotic and friable, and when its pedicle was clamped the whole mass came away leaving a somewhat rough granular reddish base which was thoroughly cauterized with the Paquelin cautery. Examination of the tissues removed revealed a small hard growth in the midst of necrotic tissue, 2 by 3 cm. in size, and microscopic examination showed a papillary carcinoma. Cystoscopy four months later showed the bladder entirely healthy. Two years after operation the patient reports that he is entirely well.

This case is remarkable in showing an extensive necrosis of the tumor probably produced by Roentgen-ray treatments to which the patient had been subjected, and is another example of the efficiency of the cautery in the destruction of the base of these tumors.

The other twelve cases are a dismal recital of recurrence and death, more or less promptly, after the operation, with the exception of one case in which the bladder shows no recurrence, but the patient is suffering from a metastatic carcinoma of the right femur.

*Group 2. Four cases in which the excision of the tumor was accompanied by a more extensive removal of the adjacent vesical mucous membrane.* In all these cases the tumors were thought to be benign, but microscopic examination after removal showed three to be malignant, and in the fourth (thought to be benign clinically) the patient has since died of metastatic cancer. Two of these cases promptly recurred, one patient dying of a very extensive prevesical carcinoma, and the other carcinomatous metastases to the various bones.

One patient, J. H. L., is well now two and one-half years since the operation in which a globular tumor 2 inches in diameter was removed from the right lateral wall of the bladder.

In the fourth case, that of J. M., there was no local recurrence, but the patient died of cancer of the stomach and liver two and one-half years after operation. There is therefore only one of these four patients who has been apparently cured by this semiradical operation.

*Group 3. Twenty cases with more or less extensive resection of the entire thickness of the bladder wall adjacent to the tumor.* The extent of the resection varied from an area 1 or 2 inches in diameter to half the bladder in two cases, and almost all of the bladder in one case. In the latter (E. A. H.) the operation was performed with no hope of cure, but to relieve the patient of fearful pain of which he was suffering, which had not been relieved by double nephrostomy with diversion of the urine from the bladder. The abdomen was opened and all of the bladder excised with the exception of the trigonal portion. The patient experienced wonderful relief and lived six months, dying from metastases which were present before operation.

Among these twenty cases there were only three (L. S., H. M. D. and E.) which were benign although they appeared malignant with the cystoscope. In these three cases the tumor was excised with a wide area of healthy bladder wall through a suprapubic incision a year ago, and both patients report that they are well.

Seventeen cases were of cancer, and of these seven were found to be practically hopeless at operation, the cancer aving already extended beyond the confines of the bladder.

The other eleven may be considered to have been airly favorable cases.

(Cases 4, 5, 6, 7 and 8 have been omitted here. They ere all single tumors and completely resected with ladder wall; all apparently cured one to ten years.)

Case 9.—E. P. T., No. 594, aged 40, was admitted April 4, 904, with two small papillary tumors, one external to each reter, which were removed with the Paquelin cautery through suprapubic incision. One year later patient returned with ematuria. Cystoscope showed a small vesical tumor at the ower angle of the suprapubic incision, and two small pedunulated tumors on the left lateral wall. No recurrence where umors had been previously excised. All three tumors removed y clamp and cautery. Dec. 14, 1907: Patient says that or eighteen months he was entirely well, since which time there was hematuria. Cystoscopy revealed several recurrent vesical tumors. Suprapubic operation, excision with an area of bladder wall of several large tumors on the posterior wall of the bladder, a small tumor back of the right ureter and a small tumor back of the left ureter. Good result. Examination, June 18, 1911: No recurrence of bladder tumors. Patient now suffering with a small obstructing median prostatic bar (which was then removed with "punch" operation). Result good. June 4, 1913, a letter states that the patient is entirely well. Microscopic examination of tumors revealed cancer. Time since last operation, over five years. September, 1913, cystoscopic examination shows an infiltration in scar external to left ureter; a specimen removed by "*cystoscopic* rongeur" shows cancer, and laparotomy shows inoperable infiltration behind bladder. It is now nine years since first operation and six years since excision of last cancer.

Case 10.—H. J. S., No. 2038, aged 58, was admitted Dec. 1, 1908. Cystoscopy revealed tumor in the left half of the bladder. Suprapubic resection of wide area of left lateral wall encircling an ulcerative tumor 2 by 4 cm. in size. Bladder closed. Convalescence good. June 5, 1912, a letter states that the patient has remained entirely well, now five years since operation. Microscopic examination of tumor shows small round and spindle-cell sarcoma.

Case 11.—A. P. Y., No. 3286, aged 68, admitted September 17, 1912. Had been treated by fulguration. Cystoscopy revealed a fairly large sessile tumor on the anterior wall covered with grayish exudate. Suprapubic and intra-abdominal operation, resection of vertex of bladder with peritoneum, almost half of the bladder being removed. Closure, no leakage. Satisfactory convalescence. June 1, 1913, a letter states that the patient feels entirely well. Microscopic examination of tumor removed revealed cancer.

Case 12.—H. S. T., No. 3124, aged 57, was admitted March 12, 1912, with large flat irregular tumor on the right lateral wall of the bladder. Suprapubic resection of most of the right lateral wall of the bladder with a wide area surrounding the tumor. Ureter not transplanted. Tedious convalescence; very bad heart and extremely fat man. Examination Nov. 9, 1912, revealed the patient well with the exception of a contracted bladder and pyuria. January, 1913, chills and fever. Right kidney enlarged and tender. May 16, 1913, patient died of uremia and heart-disease. No necropsy obtained. No evidence of recurrence of tumor. Microscopic examination of specimen removed at operation showed carcinoma.

Case 13.—M. B. S., No. 25952, aged 72, was admitted May 16, 1910. Cystoscopy revealed an irregular tumor occupying the middle and left side of the trigon. Suprapubic excision of tumor with a good margin of mucous membrane and a portion of the muscle and the left ureter, the rest of which was transplanted. (Operation apparently not very radical.) Convalescence satisfactory. Patient well one year, but died of recurrence in twenty months. Microscopic examination of specimen showed an infiltrating carcinoma.

Case 14.—L. P. W., No. 26026, was admitted April 5, 1907. Cystoscopy revealed an irregular red tumor covering the left ureter. Suprapubic operation; tumor 3 by 2 by 2 cm. in size in the left corner of the trigon. Excised with a wide area of mucous membrane, including the end of the ureter, the rest of which was transplanted. Investigation showed an infiltration of the bladder wall externally to the line of excision. An additional area of bladder wall was then excised leaving an area about 5 cm. in diameter. Satisfactory convalescence. Jan. 14, 1908, and Dec. 23, 1909, letters stated that the patient was well. A letter, December, 1912, stated that the patient had had slight hematuria and cystoscopy showed recurrent tumor at the base of the bladder.

A review of the foregoing cases given in detail shows therefore only three recurrences, and at the time of operation examination showed in one an infiltration which required a second excision of bladder wall on account of the discovery of invasion of the bladder muscle. The case was therefore not a very hopeful one. Many of the other cases also required a very extensive resection. In one case half of the bladder was removed, and the results obtained are indeed extremely gratifying, and show, I believe, the importance of resection of the bladder wall whenever a suprapubic operation is carried out for vesical tumors. The results obtained by resection are, as indicated, far superior to those obtained by excision of the tumor with the pedicle and adjacent vesical mucosa when this operation seemed thoroughly complete as indicated in the twenty-three cases in Group 1.

### CLASS B. FULGURATION

These patients were treated by the high-frequency current, the Oudin current or the d'Arsonval current.

There are twelve benign cases in this class in which the treatment was given by means of the ureter catheterizing cystoscope, the electric spark being applied through an insulated copper or steel wire. The amount of current, the length of treatment and the number of applications vary in different cases. The results obtained have been so brilliant that it seems desirable to refer briefly to each case.

Case 15.—A., aged 30, who had undergone suprapubic excision of a small tumor three years before, had been bleeding profusely, and was in a desperate condition. *Hemoglobin* 16 per cent. Cystoscope showed a small bleeding tumor near the right ureteral orifice. Vein-to-vein transfusion from his wife was performed, hemoglobin increasing to 45 per cent. Tumor was then treated by high-frequency spark; *disappeared* with one application; bleeding ceased *immediately*. Examination six months later, entirely well. Bladder normal.

Case 16.—E. L. B., No. 3429, aged 47, was admitted Dec. 26, 1912, with a tumor 1½ inches in diameter with pedicle springing from the region of the right ureter. Treated five times with the ureter catheter cystoscope and high-frequency spark. Tumor then disappeared. Cystoscopy revealed a normal bladder. Letter four months later reported patient entirely well.

Case 17.—J. A. C., No. 3373, aged 59. Cystoscopy revealed seventeen small tumors in various parts of the bladder following a suprapubic operation eighteen months previously for removal of one tumor. Prostatic hypertrophy. Tumors destroyed by ten treatments with high-frequency spark. Cystoscopy then revealed a normal bladder and prostatectomy was carried out. Six months later, examination showed that the patient was entirely well.

Case 18.—J. T. C., No. 3821, aged 66, was admitted Sept. 12, 1912, with a small tumor in the right wall of the bladder. Prostatic hypertrophy. Was given three treatments with the high-frequency current, after which the tumor disappeared completely. Examination *June 5, 1913: Bladder* normal. Prostatic hypertrophy of moderate size. Residual urine, 80 c.c.

Case 19.—J. F., No. 3093, aged 45, was admitted Feb. 10, 1912, with hematuria of *two* years' duration. Cystosco showed six large papillomatous tumors in the left half of the bladder, varying from 1 to 1½ inches in diameter and covering almost all the left half of the bladder, including the ureter. The case seemed hopeless. At first little effect was seen; then following vigorous treatment with a long spark the tumors began to disappear rapidly, and in three months the bladder was perfectly normal. During the summer and fall of 1912 occasional treatments were given to very small remnants of tumor. Repeated cystoscopic examinations during the past six months show no recurrence. A really marvelous result.

Case 20.—McD., aged 45, was admitted, June, 1911, with small papillary tumor obscuring the left ureteral orifice which disappeared entirely under three vigorous high frequency treatments. Cystoscopy one year later showed no recurrence.

Case 21.—M., aged 35. Cystoscopy revealed two tumors, each about 1 inch in diameter, one in the region of the right ureter and the other slightly posterior to it on the lateral wall. Treated by high-frequency spark twice a week for six weeks. Examination then showed that both tumors had disappeared. Examination five months later shows no recurrence. Patient entirely well.

Case 22.—P., aged 30, was admitted, June, 1912, with hematuria. Cystoscopy revealed a papillary tumor about 1 inch in diameter in the region of the right ureter, and after four treatments the tumor entirely disappeared and examination six weeks later showed no recurrence. Patient still well.

Case 23.—G. S., aged 53, was admitted, Feb. 13, 1912, with hematuria of six months' duration. Cystoscopy revealed a large papillary tumor mass which covered the whole left lateral wall of the bladder. A piece of tumor removed with the rongeur showed a benign papilloma. High-frequency treatment given, first twice weekly and later once a week with slow disappearance of all the papillomas. Last examination, May 31, 1913, showed slight edema of the bladder, but no tumor. About twenty-five treatments in all were given.

Case 24.—W., aged 40, with a history of hematuria for several months, had a small raspberry-like tumor near the right ureteral orifice which was entirely destroyed by four high-frequency treatments at weekly intervals. Cystoscopy four months after last treatment showed the bladder entirely normal.

Case 25.—W., aged 50, who had had hematuria over a period of four years, was very weak from loss of blood. Cystoscopic examination showed the entire bladder covered with vesical tumors which in portions were villous and in others smooth. A piece of tumor excised with the cystoscopic rongeur showed a benign papilloma. Treatment was begun with the high-frequency spark; improvement at first was slight, but after two months, following vigorous treatments given biweekly, tumor disappeared within a month. Examination six months after last treatment showed a normal bladder, no scar being visible.

In the foregoing eleven cases the treatment has been followed by apparent complete cure of the disease. In the one case the treatment has just been begun, and the tumors are still present.

*Summary.*—A review of these cases shows that five were under 40 years of age; four between 41 and 50 years, and only three over 50 years of age. In four cases the tumor was small and disappeared quickly with three or four treatments of the high-frequency spark. In five cases there were one or two tumors 1 inch or more in diameter and in several instances they were not villous, but were red and granular in appearance. Specimens when obtained, however, showed that they were benign. From seven to twenty-five treatments were required to cause a complete disappearance of the tumors. In three cases the papillomatous disease was very extensive, the tumors being large and covering half of the bladder in two cases, and apparently the entire bladder in one case. The cure of these apparently hopeless cases by means of the high-frequency spark is indeed a brilliant result, and shows a great superiority of the method over suprapubic excision in benign cases.

*Malignant Cases.*—The high-frequency current was used with unsatisfactory result in almost all cases which proved malignant; the following is a good example:

Case 27.—B. V. L. C., aged 51, was admitted in the spring of 1912 with a papillary tumor in the right half of the bladder, external to the right ureteral orifice, not very villous in appearance, but no more malignant looking than some of the benign cases cured by the high-frequency spark. Ten applications some of which were very vigorous, resulted in the continued growth of the tumor, which was finally removed with a considerable portion of the right lateral wall of the bladder, and microscopic examination showed that it was definitely carcinomatous. Suprapubic resection of a portion of the bladder was then carried out, with success. The patient is now well, over a year later.

Another case also seemingly favorable resisted treatment by the high-frequency current. These two cases show very conclusively the importance of obtaining a good specimen for diagnosis early in the treatment, especially if the tumor fails to become smaller under high-frequency applications.

In four cases of extensive carcinomatous tumors of the bladder a partial destruction of the tumors, and improvement in frequency and difficulty of urination was obtained by the high-frequency current, but all of these patients have since died of metastases.

One case of carcinoma showed a wonderful disappearance under electrical applications.

In three cases splendid results have been obtained by the combined use of suprapubic excision, cauterization with the Paquelin cautery and high-frequency current.

(Reports of Cases 29, 30 and 31 are omitted for lack of space.)

It seems evident that it was possible to destroy malignant vesical tumors if the spark applied is strong enough, and with the bladder filled with air. This has caused me recently to apply fulguration through an open-air endoscopic cystoscope.

It is therefore evident that extremely thorough cauterization, whether done with the Paquelin cautery or by electricity, can successfully destroy vesical carcinoma, the principal need for care being to prevent implantations in the suprapubic wound and other parts of the bladder and to thoroughly destroy the base from which the tumors have been removed. Cystoscopy should be done frequently after the operation in order to detect and destroy recurrences early.

*Summary of Cancer Cases.*—Twelve cases have been treated by cauterization through the suprapubic wound. Three patients are apparently well, and one has a small recurrence. In one case the bladder was freed from carcinoma, but retrovesical metastases are now present. Five have died, and two are rapidly losing ground. That any beneficial results have been obtained in these apparently hopeless cases is indeed very satisfactory.

(On account of lack of space results in Classes C, D and E are omitted here.)

### GENERAL SUMMARY

A review of these 117 cases of vesical tumor, 83 per cent. of which were malignant, shows that excision, as usually carried out, is utterly inadequate and followed by prompt recurrence in both benign and malignant cases. The cautery is an extremely valuable agent in conjunction with suprapubic or intraperitoneal operations, and when it has been thoroughly applied even in apparently hopeless cases some brilliant cures have been obtained. Carcinoma of the bladder, except in very extensive cases, is best treated by suprapubic resection of the bladder, leaving a wide area of healthy wall around the tumor (the cautery used if possible), ureter transplanted if necessary, and the peritoneum excised when the tumor involves that portion of the bladder. Intraperitoneal operations are rarely necessary (except in tumors of the vertex and posterior wall), as an excellent view of the bladder can be obtained by an extensive median incision, wide separation of the recti muscles, upward displacement of the peritoneum, a long incision into the bladder and good retraction. The use of 50 per cent. resorcin, or alcohol, to kill any tumor particles which may have dropped into the bladder also seems desirable, but a better plan is to cauterize the tumor thoroughly before beginning the resection of the bladder. For benign tumors the treatment with the high-frequency spark seems thoroughly satisfactory, but should be vigorously applied, and for this purpose in extensive cases the fulgurating sound (Fig. 1) or the application of a strong spark through an open endoscope or cystoscope, the bladder being filled with air, may be very helpful. In apparently hopeless cases, destruction of the tumors and their bases and adjacent portions of the bladder wall by means of a Paquelin, hot-air or electric cauteries may occasionally give unexpected cures and brilliant results. Before applying treatment an adequate specimen should usually be obtained by means of the cystoscopic rongeur for microscopic diagnosis (Figs. 2 and 3). When one depends on examination of a few villi washed from the bladder or removed by small forceps a satisfactory diagnosis is often impossible and not infrequently erroneous. I have seen the diagnosis of benign papilloma made in malignant cases from such small bits of tissue, which often contain only the superficial villi of the tumor.

Fig. 1.—Gutta-percha sound carrying a large copper wire for vesical fulguration, without the use of the cystoscope.

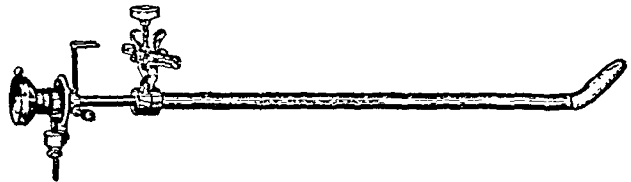

Fig. 2.—Cystoscopic rongeur closed, ready for introduction through the urethra.

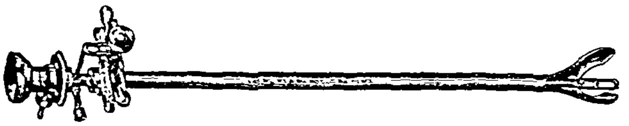

Fig. 3.—Cystoscopic rongeur open in position for grasping tumor in bladder. Later models are operated by scissors handles instead of the screw ratchet.

As in cancer elsewhere, success depends much on early diagnosis. One cannot urge too strongly the advisability of cystoscopic examination in all hematuria cases. Some cases of cancer of the bladder show few symptoms. One should not wait for blood in the urine before urging cystoscopy.

Only three years ago many authorities considered it almost impossible to cure benign papilloma of the bladder, and in many clinics abroad operations on cancer of the bladder were practically discontinued. The demonstration of the marvelous efficacy of high-frequency electrical applications is one of the most brilliant and valuable additions to surgery in recent years, and the proof that resection of the bladder wall offers a good chance of cure in cancer shows that the surgery of vesical tumors far from being a hopeless field, is indeed one of great promise.

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## ABSTRACT OF DISCUSSION

**Dr. Hugh Cabot**, Boston: The whole question in regard to these bladder tumors turns on what we are to consider benign and what we are to consider malignant. We have all seen the pathologist undergo changes of heart, and I have come to believe that the opinion of the pathologist is quite as likely to be misleading as valuable, not because he cannot decide as to the nature of the specimen given him, but because these tumors undergo changes; especially is he likely to be wrong when dealing with portions of a tumor. Dr. Young has pointed out, and I think wisely, that in dealing with a tumor we must deal with large portions, that the little snips that we cut off with cystoscopic instruments are more likely to do harm than good; they are likely to be from the surface of the tumor, whereas it is the condition of the base that we should try to determine. We all know that the surface may long remain apparently benign, while the base is undergoing malignant change. It is not clear to me that we should regard these changes in the tumor as a degeneration. They seem to be progressive, and, in some cases at least, may be regarded as the natural history of these tumors. Again, we may get benign recurrences from malignant tumors and malignant recurrences from benign tumors. I have come to believe that our clinical view of these tumors is as likely to lead us to a correct surgical management as is the report of the pathologist, and that opinion can now be formed more readily by their behavior under the use of the high-frequency cauterization. It is of value not only in the destruction of the tumor, but also in the diagnosis of the type of growth. It appears from observations far more extensive than my own that the average malignant case behaves badly under high-frequency cauterization, although there are some rather prominent apparent exceptions, and that the benign cases show brilliant temporary results. How permanent the results are we are not in a position to decide.

At present there are two methods of election, the high-frequency cauterization and the radical, total resection of the portion of the bladder wall involved. I am much pleased to see Dr. Young advise the total resection of the bladder wall in the neighborhood of the tumor, because it has seemed that a lesser removal of the bladder wall is likely to be followed by recurrence. It seems to me that in all the apparently benign tumors the high-frequency current should be tried, and in the great majority of them it will prove efficient. There are benign tumors which must be dealt with radically owing to their size or the irritability of the bladder. The mere multiplicity of growths favors the high-frequency current as against radical operation.

In doing resection of the bladder it is important to include the peritoneal coat of the bladder if the tumor is located in the portion of the bladder covered by peritoneum.

**Dr. Granville MacGowan**, Los Angeles: The majority of cases of tumor of the bladder come to the surgeon only because of loss of blood. Hematuria is not of itself an uncomfortable thing, unless it is accompanied by pain or loss of strength. The majority of tumors of the bladder are at first ordinary papillomas—common warts—but for a reason that it is difficult to explain they have a tendency to become malignant growths, assuming a malignant growth to be one that has a tendency to destroy life, and not always paying strict attention to its appearance under the microscope.

I was interested in the report of a tumor disappearing after the use of a 20 per cent. solution of resorcin. I shall tell you what I think of that disappearance. Two years ago a man about 45 years old consulted me for incontinence of urine which had lasted about six months. He did not have tabes, he did not have an obviously enlarged prostate and he had no definite obstruction in the posterior urethra, but his bladder was filled up to above the navel and had been carrying an enormous amount of residual urine for a long time. Resorting to cystoscopy, I found that the whole superior bladder wall was covered with an enormous papilloma. It hung down into the mouth of the bladder and completely obstructed it. Under such circumstances anyone would think that he had found the reason for the obstruction. The man refused operation. He was put on the regular use of the catheter. About two months and a half ago, to satisfy one of his friends from whom I had removed the prostate, and who strongly believed that this man also had an enlarged prostate, he came again for examination. I performed cystoscopy and found no vestige of tumor on the superior bladder wall or elsewhere in the bladder. I think that the action of the resorcin in one case was exactly like the action of the remedy which I applied for the curing of this particular bladder tumor. I should regard the use of a 20 per cent. resorcin solution as of no value as a remedy for tumors of the bladder and a 50 per cent. solution as extremely dangerous.

In treating these tumors we must not be discouraged by the fact that we do not cure a large number of those that are cancerous. If we follow the plan so clearly set forth by Dr. Young, we shall perform a valuable service—we shall lengthen and make bearable the lives of many persons who would otherwise be condemned to a speedy death.

In 1900 I operated on a woman 68 years of age for multiple tumors of the bladder. I removed them by resection; some of them were simple papillomas; others were evidently cancerous. The operation was successful. Not until 1910 did she have any hematuria again. She was subjected to cystoscopy frequently during the ten years and no tumors were found in the bladder. In 1910 she appeared with two cancerous tumors on the left side of the bladder base. These were resected with fire, for I think that fire is the best agent to use. I prefer the electrocautery. The patient recovered and lived a year without pain and without hematuria, but died in 1913 from cancer of the bladder and of the pelvis. When we can accomplish so much in these cases, we should not entertain the pessimistic ideas which many surgeons and more pathologists have that nothing can be done for tumors of the bladder because they are necessarily fatal.

DR. A. C. STOKES, Omaha, Neb.: I have tried cauterization, high-frequency and resection. I have come to the conclusion that the first thing to try is resection, and after that, if you like, high-frequency or any other electrical application. Given a tumor of the bladder I resect the portion of the bladder in which it is contained with the electrocautery, if I can. If I cannot and the patient will not submit to it, I resort to the other methods mentioned.

I have been interested in the pathology of these tumors, and I find that parts of them represent a carcinoma and other parts represent a metastatic implantation of the mesoblast, so that some tumors of the bladder may, perhaps, be classified with the tumors of the kidney and the other genito-urinary organs, in that they are, in some cases at least, of mixed tumor type.

DR. LOUIS E. SCHMIDT, Chicago: Eight years ago Dr. Kolischer and I read a paper before the American Medical Association in regard to the operative treatment of bladder tumors, and at that time the opinion was exactly the same as that expressed by Dr. Young to-day. There is no question that the so-called benign tumor should not be clipped off, as it frequently is. A portion of the bladder wall should be resected. So far as positively malignant tumors are concerned, I do not think that there can be any argument that there must be complete resection widely distant from the base of the tumor. If there is a peritoneal coating about that point it should certainly be removed.

Eight years ago I reported a practically complete removal of the bladder, except the trigon, for sarcoma of the bladder. It was practically a Harrington operation. I think that it was the first intra-abdominal bladder operation that I had performed. The patient is still living. We need not have any fear as to the extent of resection, but should remove as much of the bladder as is absolutely necessary. I have operated on this man two or three times since for other conditions; I have had him under constant observation, and I venture to say that there is no one here who would examine this patient and not say that he had practically a new bladder formed. He holds his urine eight or ten hours and has no difficulty in the urinary act.

We should give more thought at present to these so-called inoperable tumors. About nine out of ten cancers of the bladder that I see are beyond operative interference. In cases in which curettment and partial cauterization with the thermocautery and treatment with those different remedies is resorted to, urosepsis has set in from which none of the patients have recovered. The patients have seldom left the hospital, and they have certainly not been improved. It is in this particular type of case that we should endeavor to be of some service. The use of the Roentgen ray in combination with the high-frequency current and other agents that might possibly be of some help will do a great deal to prolong life and relieve suffering.

DR. J. R. CAULK, St. Louis: I have seen twenty-six bladder tumors. Six of these were definitely malignant. Two of them were inoperable, so far as getting curative results was concerned. Two were resections and two were multiple tumors throughout the bladder which had evidently metastasized, the patients suffering great vesical disturbance; the bladder was opened partially resected and cauterized with closure. The other nineteen tumors were in eight patients, and these were treated with the high-frequency current. In every one of these tumors there was a rapid disappearance; some required eight, nine and ten cauterizations but the great majority of them, that is, the ones dating back a year, have recurred, but have been easily controlled.

In these eight patients with benign tumors, three of the growths have been associated with prostatic hypertrophy. Two of them were treated endovesically before prostatectomy. The other one had a large middle lobe, and I had to do a prostatectomy first, and then later cauterized the tumor. I should like to know what the consensus of opinion is about such a combination.

Is there a specific effect of this particular current on these bladder tumors? That question has been hotly debated, and there are pros and cons. I had one patient with two small bladder tumors, in which I cauterized one at one sitting. Three days later there was a definite ulceration in the region of the tumor that I had cauterized. The other tumor had rapidly disappeared without leaving any evidences of having been there. Whether or not it was caused by any specific affinity of this current, I do not know.

DR. D. N. EISENDRATH, Chicago: The question of cancers of the mucous membranes and the structures underneath, from the general surgical point of view, has resolved itself into checking extension by the lymphatic channels. One point which Dr. Young emphasized, namely, the removal by cautery of these malignant tumors I heartily endorse. He has recommended the removal by a wide margin and the use of the cautery through the entire thickness of the bladder. I think that the day is coming when we will adopt the same procedure in cancer of the bladder which we are to a great extent adopting in carcinoma of the tongue and the mucous membrane of the mouth; that is not the use of the knife, but of the cautery, in incising the tissues around the cancer, thus sealing up the lymphatics.

I believe that we have not followed cases of reimplantation of the ureter far enough to decide how many of these kidneys retain their function when we transplant the ureter into another portion of the bladder. I believe that a great many ureters lose their ureteral sphincter on account of the transplantation, and, as a result ascending infection is favored and frequently cicatricial closure of the vesical orifice of the transplanted ureter of the kind that results so often in transplantation of the bowel and other structures.

# THE TRANSVERSE INCISION AND ABDOMINAL FASCIA

## AS A METHOD OF APPROACH IN SUPRAPUBIC OPERATIONS ON THE BLADDER AND THE PROSTATE *

GRANVILLE MacGOWAN, M.D.
LOS ANGELES

In approaching the bladder from above, the usual incision to lay bare this organ penetrates the skin, its subjacent fascia, the intramuscular septum, or more often the sheath and fibers of one of the recti muscles, and the cellular structures overlying the bladder and anatomically directly in contact with it. The idea is primarily to cut so that we shall come directly on the septum between the recti muscles, opening the sheath of neither of them. This is often difficult and if the incision is made close to the pubic bones the pyramidalis muscles interposed between the recti muscles and within their sheaths, lead to confusion.

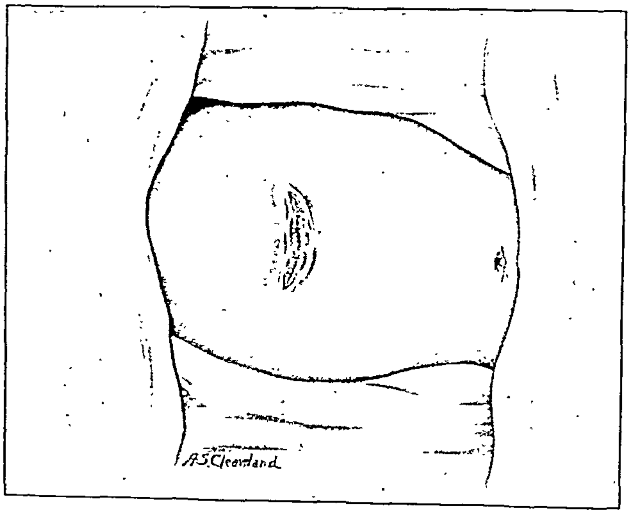

Fig. 1.—Transverse incision through the skin and superficial fascia.

If the person is stout, or if the abdominal muscles are very well developed, it is not easy to keep the lips of the wound retracted and obtain a good exposure. In manipulations within the bladder through such a wound, one may readily break down the cellular tissues in the space of Retzius. It is rough interference with this space and its infection through the working of septic material, during a prolonged operation, into its loose areolar tissue, and injury to the veins that course within it, which makes, in my opinion, for the greater mortality following suprapubic cystotomy than is observed in operations which open the bladder through the perineum.

If the bladder must be opened intraperitoneally for the removal of an extensive growth, room and light therefor may be obtained by the free extension upward of the longitudinal incision, but it is difficult to close an incision of this kind so perfectly as to do away with the probability of a postoperative hernia should the wound become an infected one. To obtain more room, one is obliged to make a transverse cut through the fascia and a portion of the muscles, or more often sever the recti or their insertions, close to the pubic bones. It is extremely difficult to bring the muscles again into their original relations and if they do become separated it makes a nasty weak spot in the abdominal wall. Several years ago I began to experiment with a transverse incision which extends through the skin, the superficial and deep fascia and a part, or the whole, of the sheath of the rectus muscle on each side. The first subjects I selected were persons with fat abdomens and large strong abdominal muscles. In such cases, using the longitudinal incision, it is extremly difficult to approach a deep-lying prostate or tumor of the bladder. At first I cut through the sheaths of the recti from their inner to their outer sides. Such an extensive incision is rarely necessary. Finding that this method of exposure of the bladder was so much easier and more satisfactory to me than the longitudinal one had been, for the past two years I have employed it exclusively. Every one knows that this incision has been used by many abdominal surgeons in various parts of the world for a long time for the approach to the peritoneal cavity, and I presume that many other people have used this incision for approach to the bladder, but I have never encountered any description of the operation for suprapubic cystotomy which I now propose to describe.

An incision from 3 to 6 cm. long is made transversely through the skin and superficial and deep fascias to the sheaths of the recti muscles, about 6 cm. above the spine of the pubis and slightly convex upward, to provide for better retraction of the skin. The deep fascia is pushed back both above and below the line of contemplated incision in the muscle sheaths for a distance of about 1 cm. so that a clear surface may be provided for the line of sutures when they are subsequently brought together. When divided its edges retract, exposing the body of the muscles. Then the intramuscular septum is to be slightly nicked below with scissors and rolled back with the sheaths, and the pyramidalis muscles appear. These consist of thin but well-marked muscular bodies which arise from the pubis and extend diagonally from each side to a point in the central tendon of the abdomen from 6 to 8 cm. above the symphysis, filling in and strengthening what appears to be naturally a weak portion of the abdominal wall. The space between these two muscles is to be sought for and they are to be separated or pressed apart by the handle of the knife. Sometimes it is necessary to split their fibers, especially at the apex, before they and their corresponding recti muscles can be pulled apart. Just as soon as this is accomplished the recti can be retracted easily. If the bladder has been previously

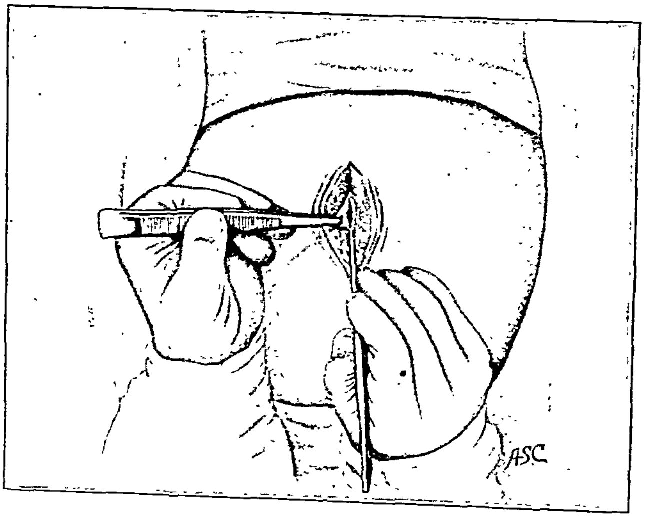

Fig. 2.—Opening of the muscular sheath.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

filled with water or air, it appears in the wound covered only by a thin layer of areolar fatty tissue. It is not necessary to push and dig around to find this organ. It should be grasped in the lower angle by an Allison forceps and pulled up and two sutures of silk, linen or celluloid thread passed through the muscular coat, one on each side, with a round-pointed, half-curved needle, to serve as traction sutures so that the bladder may not sink into the abdomen when the fluid which it contains is let out through the catheter before it is cut open or when it is punctured and the air is let out. The incision into the bladder may be made longitudinally or transversely. I am inclined to believe that the longitudinal incision is the better one. Then comes what, in my opinion, is the point of greatest importance in rendering a suprapubic cystotomy a nearly innocuous procedure, which should be accompanied by less than 1 per cent. of fatalities directly chargeable in any way to the operation itself. As soon as the bladder is opened as widely as desired, from two to four sutures should be inserted through all of its coats and the muscle or fascia of the muscle on each side, so that the space in front of the bladder and between it and the pubic bones shall not be disturbed by subsequent manipulations. If two of these stitches are placed in front, one on each side of the median line, and the bladder is held up by two other lateral stitches, it is kept during all of the course of the operation in such a relation to its surroundings that they do not become infected.

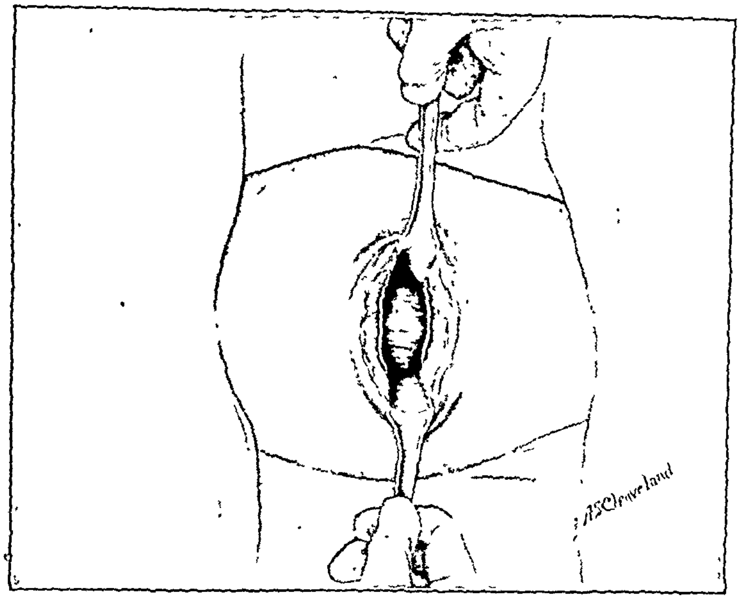

Fig. 3.—Exposure of recti muscles.

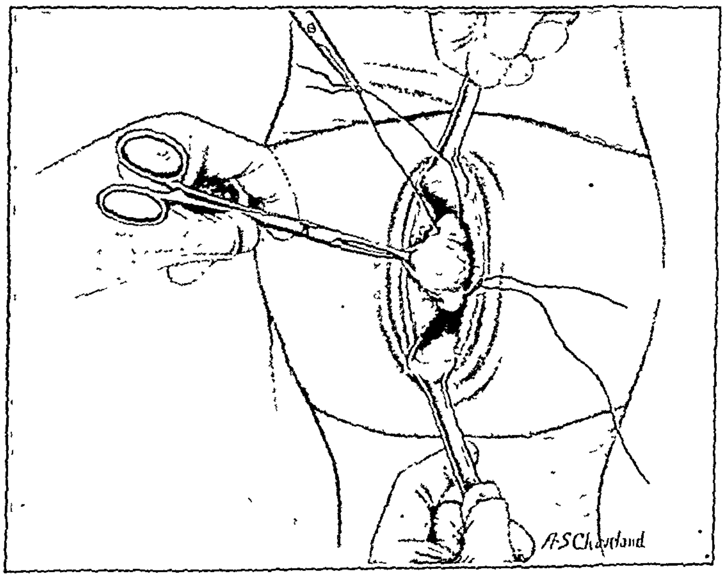

Fig. 4.—Retraction of the recti and pyramidalis muscles and the bladder drawn up by means of the Allison forceps, the traction sutures being introduced.

When the operation within the bladder is finished, if it is one that is accompanied by considerable hemorrhage which cannot be entirely stilled, or one which, as in the case of removal of the prostate, presents no immediate alarming hemorrhage but in which the loss of blood promises to be continuous and probably too great to permit of the closure of the bladder entirely, it should be closed partially around a drainage-tube sufficiently large so that it cannot become clogged with clotted blood. For this purpose I employ a piece of pure rubber tube 2.25 cm. wide and about 40 cm. long, provided with one or two lateral eyes close to its proximal extremity. This tube is slid along a gorget into the bladder before the removal of the supporting sutures. These sutures are then cut out one at a time and a purse-string suture of No. 2 catgut inserted through all of the muscular coats of the bladder about the tube. The traction sutures are kept in place until the purse-string has been inserted, so that an assistant can keep the bladder within sight. When the purse-string is in place, the last traction stitch is removed, because one has the bladder well under command with the purse-string suture, which is then tied and its competence tested by filling the bladder through a catheter in the urethra attached to an irrigator. If the purse-string has been properly placed it will be found that all of the water that enters the bladder passes out through the drainage-tube. The purse-string suture may be strengthened at each end by an interrupted suture. The upper surface of the bladder, which has been handled during the operation, and the surrounding narrow margin of cellular tissues are then mopped with tincture of iodin and the bladder allowed to fall back.

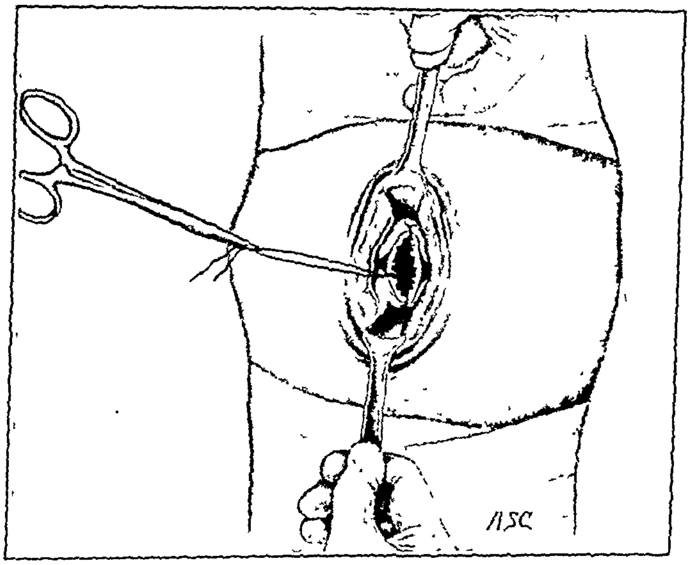

Fig. 5.—Supporting sutures introduced for the purpose of protection of cellular tissues surrounding the wound.

The large drainage-tube is placed just far enough within the bladder so that the eyes are entirely within the cavity, but the end of the tube does not touch the trigon. By this precaution tenesmus and strain and pain subsequent to the operation will be avoided. The bodies of the recti muscles at the upper angle are brought together by one or two catgut stitches. As I usually make use of spinal anesthesia or, for exploration or simple drainage or the removal of a stone, the infiltration anesthesia of a 4 per cent. solution of novocain, it is easy to tell how many sutures to place by requesting the patient to cough. The action of coughing throws the peritoneal fold up against the muscles so that one can see exactly where extra strength or protection is needed.

The edges of the sheath of the rectus muscle on each side must be brought together so that they overlap without tension. This stitch is a continuous one and is run with No. 2 iodized catgut, or with a No. 0 chromic catgut, the former preferred. The needle should be a small curved one, the smallest that will hold this size of catgut. The first stitch catches the extreme outer edge of the incision and is tied, with the ends left long. The second stitch is entered about 3 mm. from one edge of the sheath and the needle passed somewhat diagonally with the line of the incision outward to the edge of the deep fascia and then on the opposite side a corresponding stitch is taken; each should take up about 6 mm. of tissue. When this is tightened, it will be found that the edges of the incision come together easily and overlap, bringing the fatty tissues, which contain the blood-vessels, together to cover the tendon. This stitch is repeated until as much of the severed fascia is brought together as is possible without making too great tension in the center where the drainage-tube emerges. This stitch is much like a baseball stitch; instead of tying at the inner edge where it would make an extra knot, I continue it through the fatty tissue back to the point of beginning, where I tie it again. It does not take much time to place this suture and if it is carefully done there will not be any trouble about it holding securely until the tissues are united. The skin is best left open and will be closed when the bladder is healed. A small cigarette-drain is inserted at the upper and lower angles of the wound. I secure the drainage-tube to the skin with a Florentine suture, which must not pass through the tube, but through a small gauze trailer tied rather tightly about the tube just where it joins the skin, tying it in a bowknot so that it can be released, in case it is necessary to disturb the tube, without removing the suture from the skin.

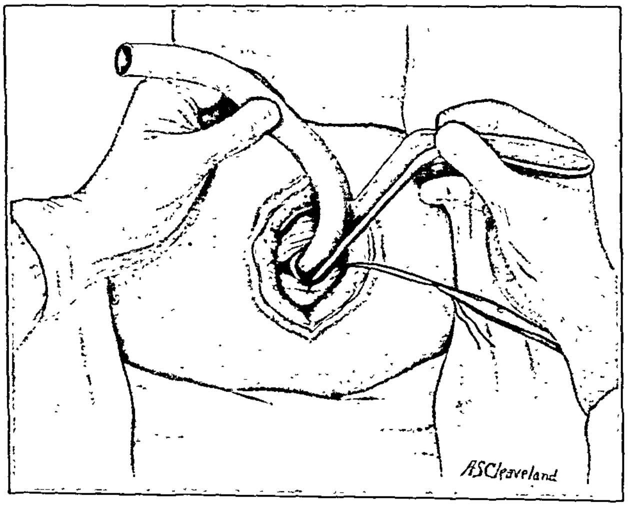

Fig. 6.—Placing of the suprapubic drainage-tube.

For many years I used a system of continuous irrigation in suprapubic cystotomies, in which the salt solution flowed into the bladder through a catheter inserted through the penis and passed out through a drainage-tube of moderate size; or entered through a small drainage-tube placed alongside of and secured to a larger one, both being sewed into the wound in the bladder; or I made use of a tube like that of Mr. Freyer. The latter I found inconveniently large, requiring an unnecessarily large incision, but effective in that it certainly keeps the bladder open and prevents the accumulation of clots; the others I found extremely destructive of my personal comfort, requiring attendance on patients at any hour of the day and night when the tubes would get obstructed and the nurse could not manage to get the flow started again, and the patients were often wet and uncomfortable. I tried also various mechanical appliances, some of which, like that of Bremmermann, are simple but not fool-proof.

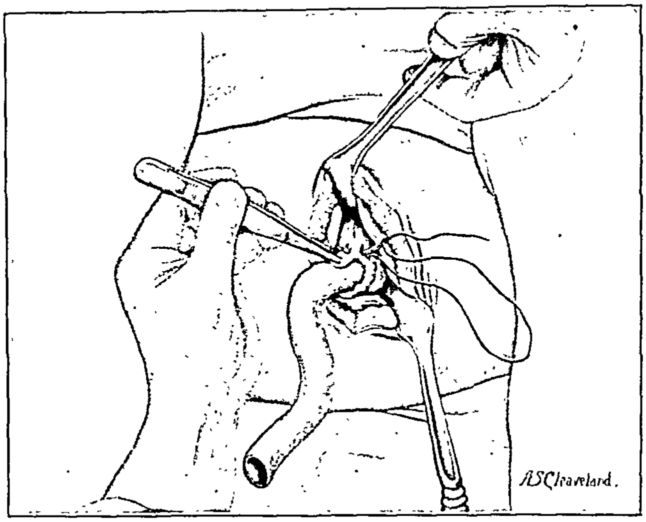

Fig. 7.—Introduction of the purse-string suture about the bladder wound.

I have devised a method of drainage which seems to me superior to any with which I am acquainted in that it requires no expensive apparatus and is so simple in its operation that attendants of the most ordinary intelligence can easily understand exactly how it works and keep it going. A catheter a little longer than the drainage-tube and about half of its diameter, sufficiently large so that it itself can not readily get clogged, is introduced through the drainage-tube previously described so that

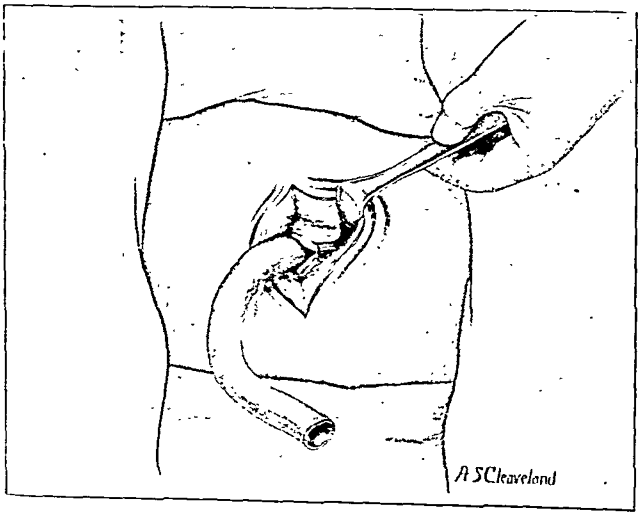

Fig. 8.—The bodies of the recti muscles brought together with a catgut stitch at the upper angle of the wound.

the eye of the catheter reaches just about 1 cm. beyond the proximal end of the drainage-tube. The irrigation through this may be continuous or interrupted. I find it best usually to commence with interrupted irrigation. Nurses are apt to think that when a system of continuous irrigation is used it watches itself, and I find that I get for the first twelve hours much better and more satisfactory service from them if I have them use a hand-syringe or an irrigator at low pressure to keep the tubes clear, injecting slowly a hot, normal salt solution every ten minutes, continuing the injection until the fluid returns reasonably free of clots. After the end of the first twelve hours I employ continuous irrigation. It will be found that the solution entering through the catheter always comes out freely through the large tube along the side of the catheter. This tube is sufficiently long to reach over the body of the patient into a sterile pus basin which is kept up against one of his hips. He is thus kept perfectly dry during the first forty-eight hours, when the large tube is to be removed and a similar smaller tube inserted into the bladder in its place, there to remain for twenty-four to forty-eight hours more. After its withdrawal, smaller tubes, decreasing in caliber, are inserted or not according to the indications of the case.

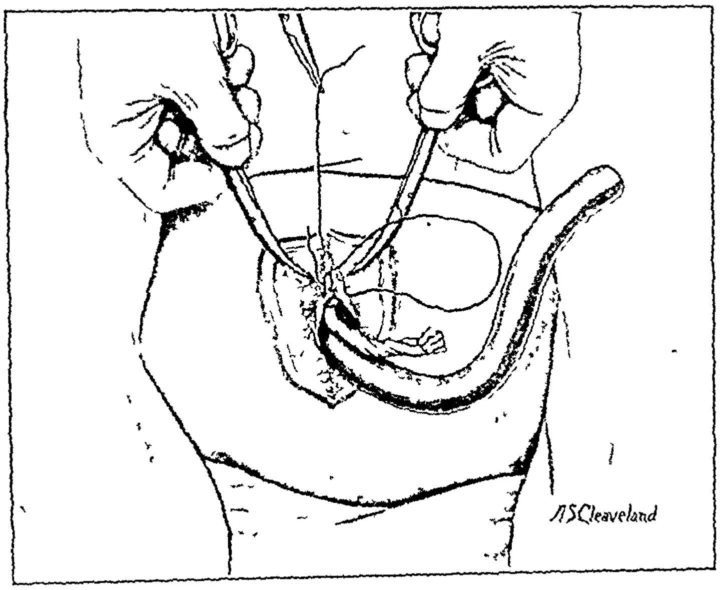

Fig. 9.—Closure of the sheath of the rectus on one side with continuous suture of the baseball type.

The wound which is left after this operation does not close originally any quicker than that left after the longitudinal incision, but it is a funnel-shaped wound from the skin to the bladder, and everything is within sight. The opening in the bladder, being made at its highest point, is readily reached, and there is no tendency for the wound in the skin to close before that in the bladder. There is no weakness in the abdominal wall afterward. The scar that is left when the wound does close is good, firm and solid, and if, for any reason whatever, one is obliged to open the bladder through such a scar, one always knows where the peritoneum is and does not have to worry about opening it accidentally.

I never have been able to understand why suprapubic cystotomy is regarded by the surgical world as a grave operation. I am very certain that the mere opening of the bladder, in the manner which I have described, should not of itself be the cause of death of anyone. Patients may die after such operations from the causes which gave rise to the necessity for the operation, but not from the operation itself, when it is done with due regard to the protection of the areolar spaces about the bladder and the prevention of postoperative hemorrhage from blood-vessels within the muscular coat of the bladder wall, which cannot take place when the bladder is before the operator so that he can see these blood-vessels, pick them up and tie them when he incises them.

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### ABSTRACT OF DISCUSSION

Dr. W. T. Elam, St. Joseph, Mo.: Dr. MacGowan's method is different from the one I have used, although I make the transverse incision through the skin and subcutaneous fat. He divides the deep layer of the superficial fascia transversely. Instead of making my incision across the suprapubic region with the convexity upward, I make the convexity downward, following the suprapubic abdominal fold. I do not know that that makes any particular difference, but my flap recedes upward nicely. Then I make my incision, through the fascia longitudinally with the body, in the median line; I know that this is a method by which I can easily enter the bladder, and work more satisfactorily. I really do not see that it could be improved much by making the transverse incision through the fascia. However, I intend to try Dr. MacGowan's method.

I use this incision frequently in intrapelvic work in women. A year ago I had a case of double inguinal hernia in a man who needed a prostatectomy. I did the operation in that way, and I have since followed it out in that way both in the fat and in the lean. I did a herniotomy on the right side and a suprapubic prostatectomy at the same time.

Dr. MacGowan's system of drainage is, of course, as satisfactory as any could be. I have been in the habit of using the continuous irrigation from the beginning. I frequently instruct the nurse to start the irrigation through the suprapubic tube and connect a retention catheter introduced per urethram into the bladder, and then within a short time reverse it. I keep that up during the first twelve hours in order, if possible, to prevent, dislodge and remove clots.

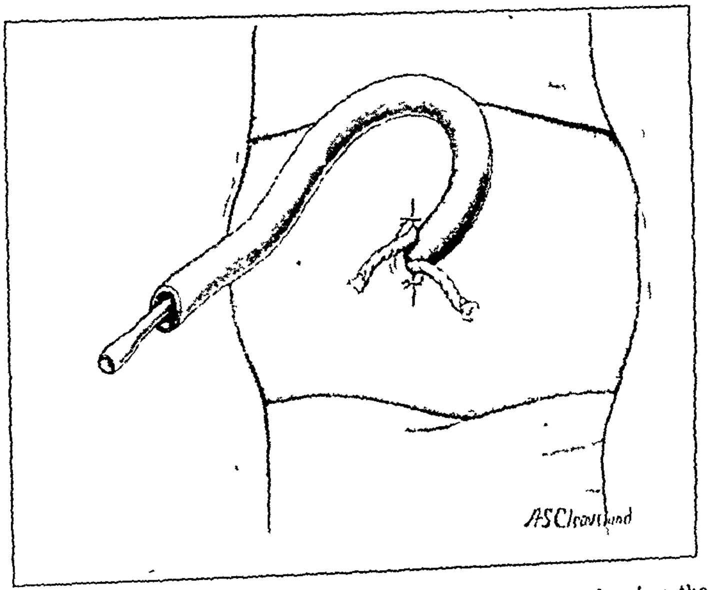

Fig 10.—The wound closed, drainage-tube in place, showing the catheter introduced through the drainage-tube for the purpose of irrigation.

Those who have done suprapubic cystotomies by making the incision vertically through the skin will be much gratified by the change in making a transverse incision through the skin and subcutaneous fat, and perhaps Dr. MacGowan's additional transverse incision through the deep fascia may make the field of operation still easier of access.

Dr. M. Krotoszyner, San Francisco: I am pleased to hear that Dr. MacGowan has not given up spinal anesthesia, which I also use in selected cases and which I consider a safe and efficacious method, especially for prostatics. In a few cases, in which on account of the patient's poor condition even spinal anesthesia did not seem to be practicable, I have opened the bladder under local anesthesia with gratifying results. I use a 0.5 per cent. solution of novocain, to each 10 c.c. of which is added one drop of epinephrin. A rhomboid figure is described by infiltrating the bladder region above the pubes, in the center of which the incision is made. This method of anesthesia seems to be particularly indicated for the purpose of rapidly opening the bladder as the initial step in the two-stage prostatectomy.

Dr. G. G. Smith, Boston: In order to get at growths in the very base of the bladder or in the prostate and so that we can see what is going on at the prostatic orifice, it is essential to carry the incision well down to the pubic bone.

I should like to ask Dr. MacGowan whether that lower edge of the rectus fascia does not prevent one from getting down into the pelvis.

Dr. A. L. Chute, Boston: I should like to ask Dr. MacGowan if he thinks that constant irrigation is essential. I have never had any trouble with clotting, and it has always seemed to me that the continuous irrigation tended to keep up the bleeding. I should like to ask him if he has had any trouble in that way. It seems to me that the bladder distention ought to open up the vessels and cause more bleeding. The other method works satisfactorily. When continuous irrigation is used, moreover, you are not able to estimate the amount of urine. If the patient is in bed it seems to me it is essential to know how much urine he is excreting, and I do not see how that is possible with continuous irrigation.

Dr. Granville MacGowan, Los Angeles: I think you refer to the incision that I saw Cabot make in Boston this year. What struck me most about that incision was that it was so unnecessarily large. It is easy to obtain everything you desire without it. I do not know how many bladders I have opened suprapubically, a thousand at least in my lifetime, and I have tried all methods to make it easy and safe. One can pull the bladder up and out on the abdominal wall through the incision which I have recommended. It is not necessary ordinarily to see the mouth of the bladder, but, if it should be desired to see it directly with the eye, the lower flap of this wound can be pulled down with a retractor after the central tendon is slightly snipped along under the sheath of the rectus muscle. I have removed tumors from the bladder extraperitoneally and intraperitoneally through an incision of this kind. You can get more room by going out further on the fascia, even out beyond the rectus muscles, if it is desired. The edges pull wide apart readily. There are a few cases in which I should prefer the incision which Dr. Cabot uses. It is surprising how much can be done through a small incision made transversely, and, if a small incision through the skin and fascia gives all the room necessary for an operation, why make a larger one? If a larger one is needed, it can always be made.

It has been my unfortunate situation during the whole progress of my surgical career to be dependent on myself. The surgeons who are in large hospitals have at all times skilled interns to look after their cases. Getting up in the middle of the night to take clots out of a bladder is probably something that many of you have been called on to do. When a surgeon has to nurse the cases himself, continuously watch them, or have them looked after by persons who are not trustworthy and skilled, he spends a great many anxious nights if he does not have some way to prevent the accumulation of clots in the bladder. The only sure method that I know for preventing such an occurrence is the procedure of Dr. Freyer, who sticks in an extraordinarily large tube, so that if there is tenesmus from the clots the bladder muscle cannot close. This very large tube, or my own, which is just as efficient and much more comfortable, prevents its closure. Continuous irrigation by the drop method is a great boon to the patient, to the nurse and to the surgeon. The nurse knows practically what she is doing, the patient does not have excessive hemorrhage and the surgeon does not lose his rest. It does not seem to me that it is at all necessary to know how much urine the patient is passing. If the eye is trained, a good observer can tell the minute he comes into the room of a man who has been operated on if there is any lack of kidney function by the general look of his face, and an examination of his tongue; the latter always waves the danger flag.

When after operation the bladder is sewed up tight—I will confess that I have been venturesome enough to do this a few times after prostatectomy and do it successfully, though I should not like to recommend such a practice in general to surgeons—an accurate account of the fluid which comes out of the bladder can be kept, but even then you do not know how much is blood and how much is urine, and you have to squirt water continuously through the catheter to keep it open. If a tube of the kind that I have described here is used, you will know how much fluid has gone into the bladder, because the nurse keeps track of it, and you will know how much comes out of the bladder, and you can deduct one from the other and have a fairly accurate idea as to how much urine the patient has passed.

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# VASOSTOMY—RADIOGRAPHY OF THE SEMINAL DUCT *

WILLIAM T. BELFIELD, M.D.
CHICAGO

Vas and vesicle usually accommodate from 4 to 6 c.c. of a non-irritant liquid, such as 5 per cent. argyrol solution, injected through a scrotal vasostomy. None of the solution escapes through the ejaculatory duct until vas and vesicle are filled, because this exit is closed by a sphincter. This muscle yields to overfilling of the seminal ducts, the solution passing into the prostatic urethra and thence usually backward into the bladder, but occasionally forward into the anterior urethra, escaping at the meatus. An unlimited quantity of solution may thus be used to irrigate vas, vesicle, ejaculatory duct, prostatic urethra and utricle; and this irrigation may be repeated at the discretion of the operator.

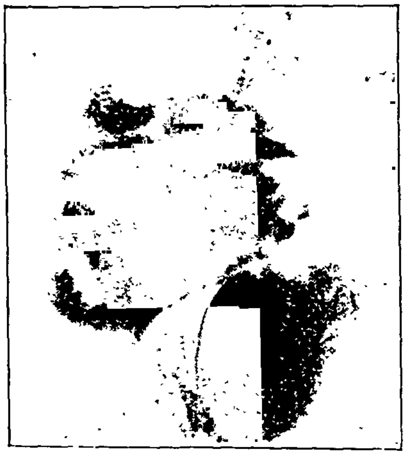

Fig. 1.—Pus infection of vesicle; gleet. For this and the following radiograms, vasa deferentia, seminal vesicles and ejaculatory ducts were injected with collargol solution through vasostomy.

For days after such filling of the seminal duct, peristalsis of vas and vesicle occurs, shown by the constant presence of argyrol in the urine, and sometimes demonstrable through the urethroscope as an intermittent discharge from the ejaculatory ducts. Since this occurs without subjective perception, peristalsis must be regarded as a normal function of the seminal, as it is known to be of the urinary, duct; and the prostatic urethra as the natural catch-basin for the seminal duct, as is the bladder for the urinary canal.

Retrograde urination, that is, the escape of urine through the vasostomy incision when a strong desire to

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

urinate was resisted by the patient, has been observed in three of my cases; in two of these, argyrol solution injected into the bladder was forced through the scrotal incision, proving the source and course of the clear fluid previously observed to issue from the cut. Two of these patients had suffered from frequently recurring epididymitis during several years following a gonorrhea; in each the corresponding ejaculatory duct was patulous and easily catheterized. Although this passage of urine from the urethra into the vas seems hitherto to have been unobserved except after operations on the prostate (by Voelcker in two operative cases), yet it seems probable that such retrograde passage of urine into the seminal duct may be the not infrequent cause of recurrent epididymitis and vesiculitis following gonorrhea, as in these cases.

The normal peristalsis of the seminal duct explains certain hitherto obscure phenomena, including the phosphaturia so frequent in the subjects of sexual neurasthenia. These men usually exhibit an infection of the vesicles with hypersecretion and active peristalsis of their contents. Since the vesicular secretion is known to precipitate lime-salts when mixed with urine, it is apparent that the constant discharge of such secretion into the prostatic urethra and thence into the bladder can throw the lime compounds of the urine out of solution in the bladder, causing phosphaturia. That this was the correct explanation in two patients I proved by catheterizing both ureters while the urine in the bladder was cloudy from undissolved lime-salts; from these catheters clear urine escaped. Blood and pus mixed with urine may be derived from the vesicles.

Anastomoses between the dilated extremity of the vas (ampulla) and the associated vesicle are not rare. Since these must furnish direct passage of spermatozoa into the vesicle, this observation seems to prove that the vesicles may be not only secretory organs, but also reservoirs for spermatozoa, contrary to the current assumption.

Experience with vasostomy has shown that sterility may be due to occlusions not alone of the epididymis, but also of the vas and of the ejaculatory duct; also that the absence of spermatozoa from the emitted fluid is sometimes due not to an obstruction of the ducts but to arrest of the spermatogenic function of the testis through an infectious disease, such as mumps or typhoid fever.

That such arrest of spermatogenesis, without impairment of sexual power, may be caused by exposure of the testes to the Roentgen ray, and that it commonly exists in cryptorchids and hybrids (for example, the mule) is generally known; but that it may result also from certain infectious diseases should be understood. For the delusion is still prevalent that sexual power is dependent on spermatozoa; and that the absence of these from the semen of a potent man must be due to occlusion of the seminal ducts. The fact is that sperm production may be abolished by the toxins of general infections, such as typhoid, without diminishing the subject's sexual power; he becomes sterile, but remains potent.

In two of my patients a chronic colon bacillus infection of the seminal duct has caused chronic toxemia, shown by continuous high temperature and progressive loss of weight, exceeding 20 pounds in one case. In both patients irrigation of the seminal ducts through vasostomy was followed by rapid return to normal temperature and gradual recovery of usual weight, as well as disappearance of a chronic gleety discharge sometimes tinged with blood.

The juxtaposition of ureter and infected vesicle, already shown to be capable of causing obstruction of the ureter and consequent damage to the associated kidney, is illustrated in some of my radiograms. The ureter is shown to lie approximately over the central axis of the vesicle; the usual text-book illustrations, made from dissections of the dead subject, apparently do not represent the relations existing in the living body.

Infections invading the seminal duct from either end (urethra or epididymis) may produce (*a*) occlusion or (*b*) a patulous condition of the ejaculatory duct. In the former event a closed abscess results; in the latter, vesicle and epididymis are liable to recurrent invasions by infection and even by urine from the prostatic urethra. The result in either event may be a pus-tube with chronic toxemia. This can usually be successfully treated by injecting the vesicle through vasostomy, sometimes also from the urethra.

In medicating the vesicle through vasostomy, a preliminary injection of some non-irritating liquid, such as 5 per cent. argyrol solution, should be made to test the patency of the entire seminal canal. Should this reach the urethra in a few minutes (shown by blackening of the urine), collargol solution, 1 to 3 per cent.,

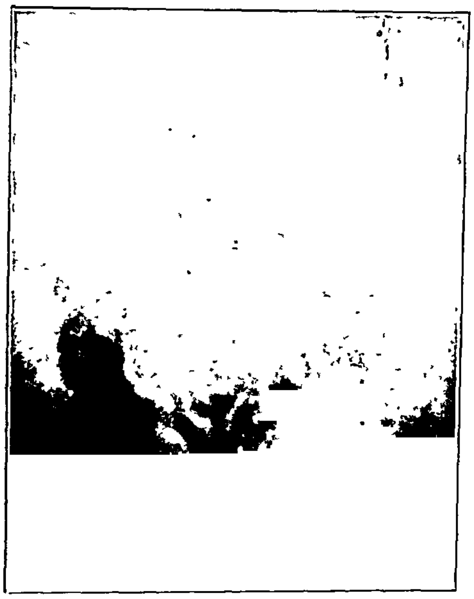

Fig. 2.—Colon bacillus infection of vesicles; chronic toxemia.

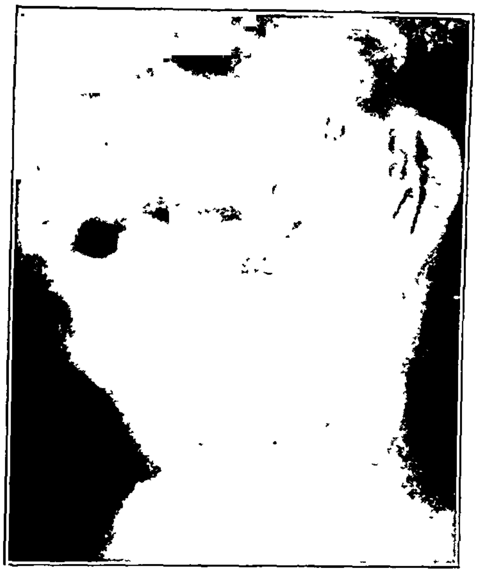

Fig. 3.—Pus-tube on the right; tortuous vas on the left side.

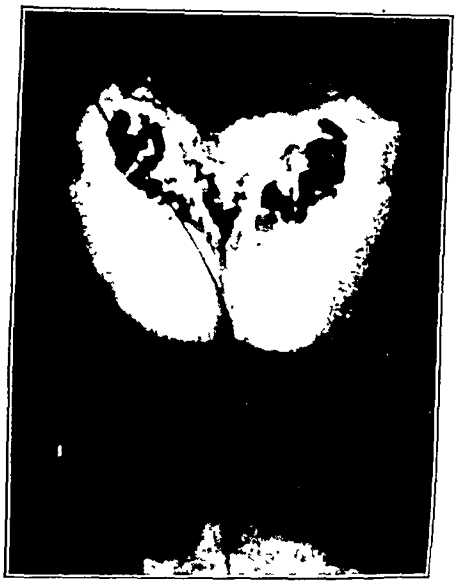

Fig. 4.—Bilateral gonococcus infection; stiletted catheter in right ureter.

may be immediately injected. If the argyrol does not appear in the urine, the more irritating collargol should not be used; for it will be regurgitated into the scrotal tissues around the cut, and there produce a tender induration which is slow to disappear.

The radiograms were made by Dr. Potter and Mr. Ball of the Presbyterian Hospital, and Drs. Case and Van Horn of St. Luke's Hospital, Chicago.

32 North State Street.

# TRANSPLANTATION OF THE TESTICLE *

VICTOR D. LESPINASSE, M.D.
CHICAGO

The first experimental work on transplantation of the testicle was done by Berthold[1] in 1849. He used completely castrated roosters and transplanted the testicle into the abdominal cavity. The transplanted testicle grew, maintained its peculiar character as a sexual organ, and the male habits of the chicken continued.

Other investigators have confirmed this result in chickens. In frogs, Herlitzka[2] transplanted testicles into the peritoneal cavity, and found that they degenerated and became absorbed.

Meyns[3] worked with frogs and implanted parts of the testicle into the dorsal lymph-vessel of the frog and found that these transplants grew and developed new mature spermatozoa.

The size of the transplanted organ has a great deal to do with the success or failure of the operation. If the testicle is transplanted *in toto,* it is almost certain to necrose. If it is cut into thin slices from 1 to 2 mm. in thickness and then transplanted into a vascular bed, such as in the substance of a muscle or in the liver, it will grow. In frogs and chickens the spermatogenic cells retain their function and produce spermatozoa. In warm-blooded animals, the spermatogenic function seems to be lost and the spermatogenic cells disappear in less than thirty days. The Sertoli cells and the Leydig cells, however, do not degenerate but seem to maintain their life and function.

## EXPERIMENTAL WORK

In the first group three adult dogs were castrated and at the same time their peritoneal cavities were opened. Dog 1 had the two testicles from a week-old puppy dropped free into his peritoneal cavity. Dog 2 was treated in the same manner. The spermatic cord and the tunica vaginalis testis were cut away from the puppy testicles, but the epididymis was left attached to the testicle. In Dog 3 the two puppy testicles were wrapped up in the omentum. These dogs were killed six weeks after the operation. The peritoneal cavities were explored but no trace of the transplanted testicles could be found.

In the second group adult dogs were castrated. The testicles freed of the epididymis, cord and tunica vaginalis testis, were then cut in slices from about 1 to 2 mm. in thickness transverse to the long axis of the organ. The central slice, which was the largest, was then taken and placed among the fibers of the rectus abdominalis muscle. These animals were killed in six weeks' time and the transplanted tissue examined. It had shrunk to from approximately one-quarter to one-third the original mass, and had changed to a yellowish color. In some of the dogs the transplant could not be found at all.

Experimental transplantation of the testicle with blood-vessel anastomosis is practically impossible by either a suture method or magnesium ring method of blood-vessel anastomosis applied to the spermatic artery.

The ideal method is that of patching—removing the section of the abdominal aorta, baring the opening of the spermatic artery, and removing the piece of the vena cava, baring the outlet of the spermatic vein.

My search of the literature revealed no experimental work done by this technic. There is, however, one human case on record by Hammond and Sutton[4] of Philadelphia, who operated by making an end-to-end anastomosis of the spermatic artery and vein. This case was an apparent technical success, but the ultimate result was a marked atrophy of the transplanted testicle. The person into whom the testicle was placed has one sound testicle, and hence it is impossible to determine the functional value of the transplanted organ.

It is a generally current opinion that a graft of an organ has a better chance to grow in an individual that needs the secretion from this organ than in one with a normal organ already.

## REPORT OF CASE

A man, aged 38, consulted me in January, 1911, to find out if anything could be done for the loss of both testicles. One testicle which had been retained was removed during a hernia operation; the other had been lost by an accident about two years previous to his consultation with me. He was unable to have intercourse, which was his chief reason for coming to me.

A testicle from a normal man was easily obtained. In fact, I was surprised at the number of testicles that are available for transplantation purposes.

The two patients were anesthetized at the same time, and the recipient prepared as follows: The scrotum was opened high up and a bed prepared in the same way as we prepare the bed for the reception of an undescended testicle. Hemostasis was carried out with great care. Another incision was made over the rectus abdominalis muscle; this incision was carried down through the skin and fascia. The fibers of the rectus muscle were exposed and these fibers separated by opening an artery forceps plunged into the muscle. Hemostasis was carried out and then the testicle to be transplanted was removed. It was immediately stripped of the epididymis, cord and tunica vaginalis, and then sliced transversely to its long axis, these slices being approximately 1 mm. in thickness. The central slice and the one next to it were taken out and placed among the fibers of the rectus muscle. Another slice was placed in the scrotum. The wounds were closed without drainage and healed by first intention throughout.

On the fourth day after the operation the patient had a strong erection accompanied by marked sexual desire. He insisted on leaving the hospital to satisfy this desire. The desire and power of erection have continued for two years. It is now two years and six months since the operation, but I have not seen the patient for six months.

## CONCLUSIONS

Transplantation of the testicle is a perfect operation in frogs and chickens; spermatogenesis and sexual characteristics are preserved. In guinea-pigs, rabbits and dogs the results are variable. Some experimenters report that there is no success at all; others assert that the interstitial cells remain and functionate. In the two human cases that have been tried to date, the one with the blood-vessel anastomosis was certainly a failure as far as spermatogenesis is concerned; but the interstitial cells may be and probably are present.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Berthold: Transplantation der Hoden, Mueller's Arch. f. exper. Med., 1849, p. 92.

[2] Herlitzka: Transplantation des testicules, Arch. ital. de biol., 1899, ix, 140.

[3] Meyns: Froschhodentransplantation, Arch. f. d. ges. Physiol. (Pflüger's), 1910, cxxxi, 433.

[4] Hammond and Sutton: Case of Transplantation of Testicles, Internat. Clin., 1912, xvii, 150-154.

In my own case the result clinically has been absolutely perfect. The man has regained his sexual powers completely, both as to desire and as to ability to perform. Furthermore, these powers have remained present for two years.

7 West Madison Street.

## ABSTRACT OF DISCUSSION

### ON PAPERS OF DRS. BELFIELD AND LESPINASSE

Dr. E. O. Smith, Cincinnati: A few years ago when Dr. Belfield told us of his treatment of the seminal vesicles through the vas deferens, most of us were somewhat skeptical as to the injected fluid getting into the seminal vesicles. Having taken advantage of the Roentgen ray, we now know that the fluid does go from the vas into the seminal vesicles. The operation of injecting the seminal vesicles is a simple one and can be done under local anesthesia. I use anesthesia only in the skin; I use no anesthetic in the spermatic cord or vas. Colic or severe pain following the injection of collargol has been mentioned as due to blocked ejaculatory ducts. That, of course, would explain some cases, yet one of my first patients injected for radiographic purposes, had a most severe colic, notwithstanding the fact that he passed the collargol through the urethra, a few minutes after the injection of the seminal vesicles. This colic lasted for several hours, and was so severe that morphin had to be given hypodermatically. In this case the collargol regurgitated through the incision in the vas into the scrotum. There was a thickening and hardening of the parts, due to the inflammatory process resulting from the irritation of the collargol, but there was no infection.

The relation of the ureter to the vesicles is, I think, best studied on the cadaver. My observation has been that the ureter enters the bladder near the upper pole of the seminal vesicle. The ureter passes diagonally through the bladder, and the ureteral orifice in the bladder would show a little farther down on the seminal vesicle in the roentgenogram. In one or two specimens that I dissected the seminal vesicle extended probably three-quarters of an inch above the ureter overlapping it.

We have found some interesting anomalies in the seminal vesicles in our post-mortem dissections. One was completely double on both sides in the same person. By that I mean that, instead of a single tube with the saccules on the side, we found two complete seminal vesicles on each side joined only at the lowest part.

I think one of the results of this roentgenographic work will be therapeutic. I believe that a great many of these old chronic cases will be cured by one injection of strong collargol solution. Perhaps some of the type of cases that we have been draining surgically can be relieved by this simpler method. One of our first patients for roentgenoscopy was a man who had been treated as a neurasthenic for a long time. We found by examining the seminal vesicles through the rectum that there were some abnormalities, tenderness, etc. No bacterial infection was found in the expressed contents of the seminal vesicles; yet the neurasthenic symptoms and pain disappeared after one injection of the collargol. I therefore believe that we shall soon be in a position to recommend a single injection of a strong solution of collargol as a therapeutic measure. In case this fails we can then resort to the more radical treatment of surgical drainage.

Dr. V. D. Lespinasse, Chicago: Last winter I had two interesting cases of vesicular infection. One of them was in a man whose condition was originally diagnosed as grippe, then as rheumatism. Finally he complained of a little urinary disturbance. He was a man about 55 years of age. He had a very slightly enlarged prostate. He claimed that he never had had gonorrhea, but he had a distinct bilateral seminal vesiculitis; the vesicles were enlarged and tender. I wanted to open up the vas, but was refused.

The other patient was a man I treated some eight months ago for a vesiculitis. He complained of slight pain, particularly on ejaculation. He apparently made a recovery. He went to work, and had attacks of colic. A doctor told him he had a stone in his bladder and gave him some morphin, which quieted his attacks. When he came back to me I suspected that the stone was not in the bladder. I performed cystoscopy and found no stone. I put my finger into the rectum, and as soon as I touched the vesicle he said, "There it is." I opened up the vas, and where I exposed it, it was dilated. The lumen was about as large as the lead in a pencil. As soon as incision was made a light, brownish fluid came out. After a few minims of that had passed out the pain was relieved. A few days later I injected the vesicle and the patient had a return of pain. The brownish fluid continued to drain for ten days. The patient was well when I left home yesterday.

Dr. William T. Belfield, Chicago: The spasmodic contraction of the seminal vesicle—spermatic colic, as it is called—has surely in one case been mistaken for renal colic. Roentgenoscopy was performed and no stone was found. Nevertheless the surgeon opened the kidney without finding the stone or relieving the spasm. Some time afterward the patient came to me. He had a history of seminal vesiculitis following gonorrhea prior to his supposed renal colic; opening the vas and injecting the vesicle relieved him. I reported that case some years ago.

Another patient was operated on for appendicitis because of vesicular pain; another was about to be operated on, but declined. So I fancy we have quite a large clinical field here which we are just beginning to explore.

The case of Dr. Lespinasse is certainly interesting. The transplantation of both testicles and ovaries has been worked out on animals, and in the case of ovaries on human beings. Tuffier of Paris has a list of cases in which he has transplanted ovaries with a restoration of the menstrual function. On this operation on the male, so far as I know, there is no literature whatever. Dr. Lespinasse's case, therefore, acquires extreme interest.

Dr. V. D. Lespinasse, Chicago: Tuffier's work was on ovaries transplanted into the abdominal wall. One very important point in the technic is that the ovary should be transplanted with the pedicle or hilum toward the muscle. Apparently if he put the hilum out toward the skin the ovarian graft did not seem to take. That is the statement he makes. My experience with ovaries is nil. Perhaps if we are a little more careful in our technic, we can really get some results that are worth while.

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**Ostwald's Theory of Genius.**—"If we bear in mind the well-known laws of heredity discovered by Mendel and de Vries, we know that every descendant is a mosaic of those qualities which have been transmitted to him partly by the father and partly by the mother. In the face of this fact the problem arises how such an unusual personality can be descended from parents of average ability, since it is just from these laws of heredity that we should conclude that another average equipment would result." The answer which Professor Ostwald would venture as regards this problem is this: The portions of the inheritance constituting a new being probably only on rare occasions fit together or harmonize with each other. The adolescent man then applies the greatest portion of his energy in the task of organizing these accidental inheritances for the purpose of common work and harmonious cooperation, and this task uses up the greater part of the available energy, and withdraws it from productive work. It is only in rare cases that the inheritances are so constituted that they fit each other from the beginning, so that the young man has not to expend any energy on the mutual harmonizing of his elements, but can immediately set about his creative work.—*Current Opinion*, London.

# THE OPERATIVE TREATMENT OF HALLUX VALGUS AND BUNION

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Surgeon to the Pittsburgh and St. Margaret Memorial Hospitals
PITTSBURGH, PA.

The etiology and pathology of this distressing affection are well known. Though it is objectively trivial, not dangerous to life, its subjects are frequently more grateful for relief than are those on whom some life-saving operation has been done.

Numerous methods of operation have been devised and practiced, notably those of Barker, Hueter, Riedle, Weir, Fowler and Mayo. In all, except that of Fowler, the approach to the joint is made from the inner side of the foot, which places the scar in a position where it will be subject to pressure from the shoe. Mayo[1] states that this is but a theoretical objection and that practically it causes no trouble.

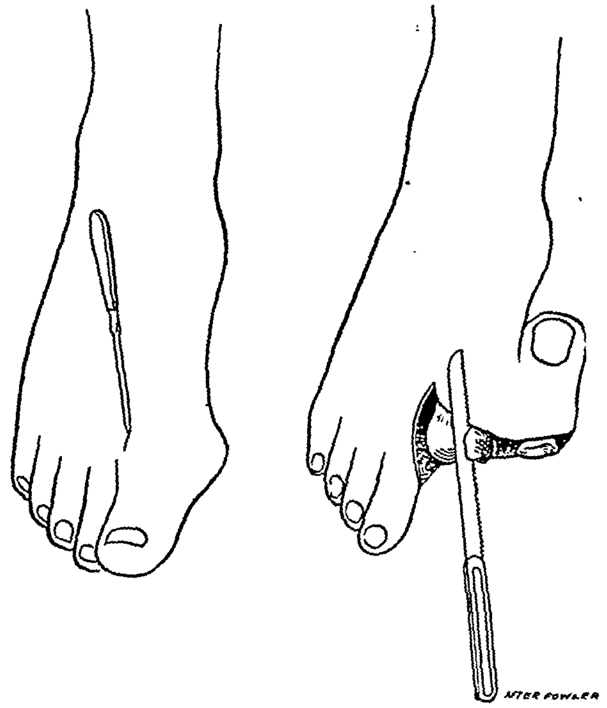

Fig. 1.—Fowler's incision for hallux valgus; to be made by dissection, not transfixion, close to outer side of first metatarsal bone; reversal of great toe. Case of moderate degree is shown, requiring removal of but a portion of metatarsal head.

The method of Fowler[2] as modified by me possesses certain advantages which may be summarized as follows:

1. The incision is in a location where, even on theoretical grounds, it cannot be objectionable.
2. It affords a much better exposure of the diseased ends of the bones than any other method and permits accurate shaping of the new articular surfaces.
3. The joint is opened on the outer[3] side, dividing the shortened external lateral ligament, an important step in avoiding recurrence.
4. Ankylosis is prevented and a new joint formed by the interposition of a fatty-fibrous flap.

### DESCRIPTION OF OPERATION

The incision is made between the affected toe and the second toe, beginning well behind the head of the metatarsal bone on the dorsum of the foot and extending directly through between the metatarsal bones to the plantar surface (Fig. 1). It should not be made by transfixion but by careful dissection, the outer side of the first metatarsal bone being hugged closely. This is important, as will be seen later. The external lateral ligament of the affected joint is freely divided and the great toe forcibly dislocated inward and reversed, the articular surfaces of the metatarsal head and the proximal phalanx presenting (Fig. 1). So much of these surfaces as may be necessary is now removed, preferably with a mounted wire saw (Fig. 2).

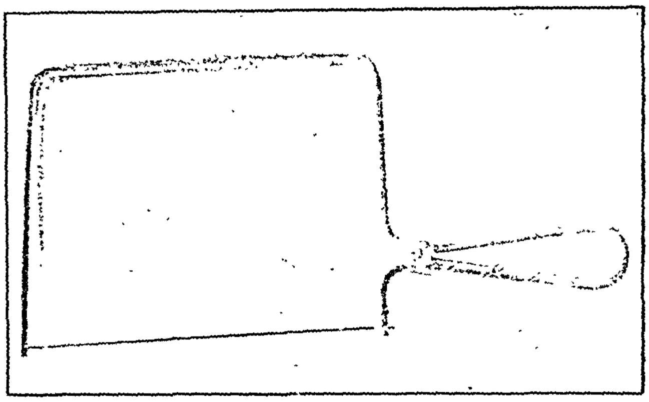

Fig. 2.—Mounted wire saw. The bone ends can be sawed into any shape desired with ease. The saw is cheap and can be procured at any hardware store.

In bad cases the head of the metatarsal and part or all of the base of the phalanx require removal. If so, after the periosteum has been pushed back, the metatarsal is sawed from before backward to leave a convex surface to oppose the base of the phalanx sawed in the same direction with a concave surface (Fig. 3). The plane of these surfaces should be at right angles to the shaft of the bones. Thus we substitute for the ball-and-socket joint a hinge-joint permitting of but little lateral movement.

A fibrous-fatty flap is now dissected up beginning at the web between the toes and having its base at the point of section of the metatarsal bone. This is turned outward over the convex end of the metatarsal and fixed in place on the inner side of the bone with a few catgut sutures (Fig. 4). Abundant tissue is available for this flap, since the intermetatarsal space is much increased in hallux valgus (Fig. 5), and the primary incision lies close to the first metatarsal bone.

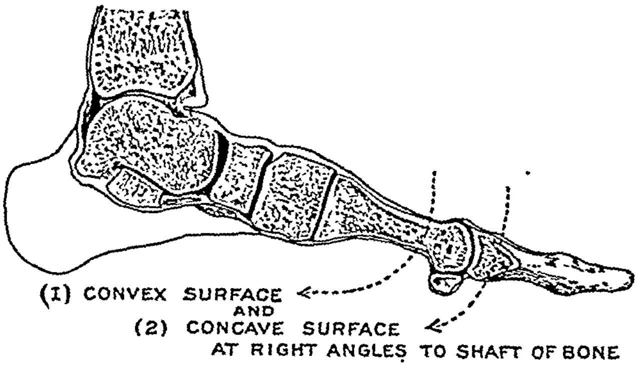

Fig. 3.—Only extreme cases would require removal of amount of bone here depicted. The direction of the lines of bone-section for forming a hinge are indicated.

Instead of this flap, the bursa lying over the head of the metatarsal on the inner side may be used to interpose between the sawed surfaces as in Mayo's operation. The fatty-fibrous flap is preferred, since it is normal healthy tissue, while the bursa is in a state of chronic inflammation (bunion). If the bursa shows much evidence of disease it should not be used for this purpose, but dissected out.

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[1] Mayo: Ann. Surg., August, 1908.

[2] Fowler: Treatise on Surgery, ii, 620.

[3] Throughout this paper the terms "outer," "inner," "external" and "internal" refer to the midline of the body and not to the midline of the foot.

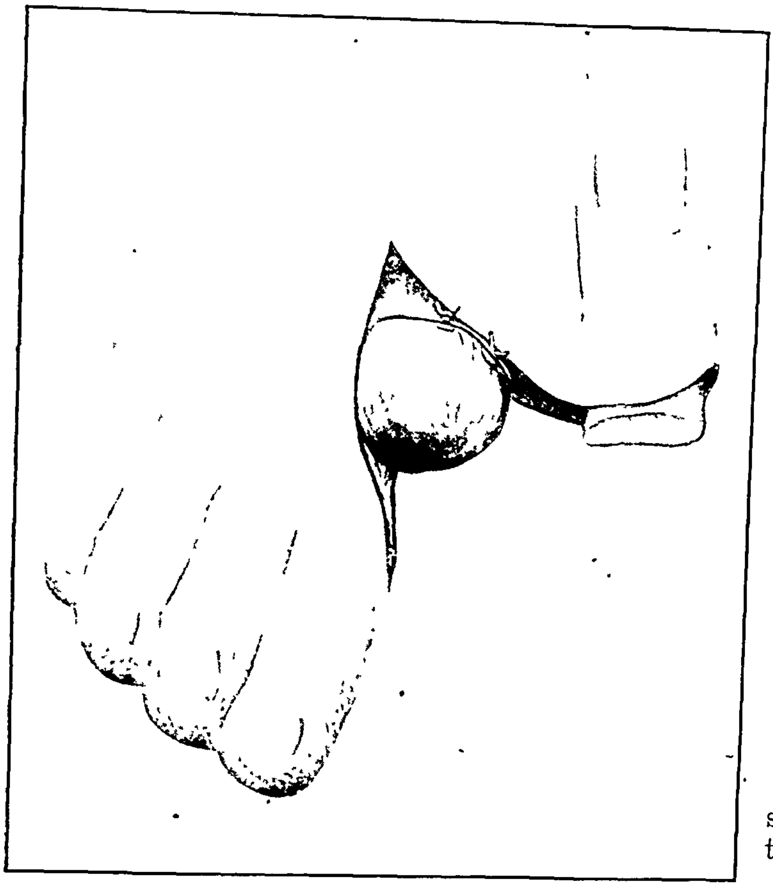

Fig. 4.—The entire head of the metatarsal is supposed to have been removed and the fatty-fibrous flap from the intermetatarsal space turned over sawed surface to inner side and fixed with a few catgut sutures. The artist has improperly represented it in that the covered end of the metatarsal projects too far.

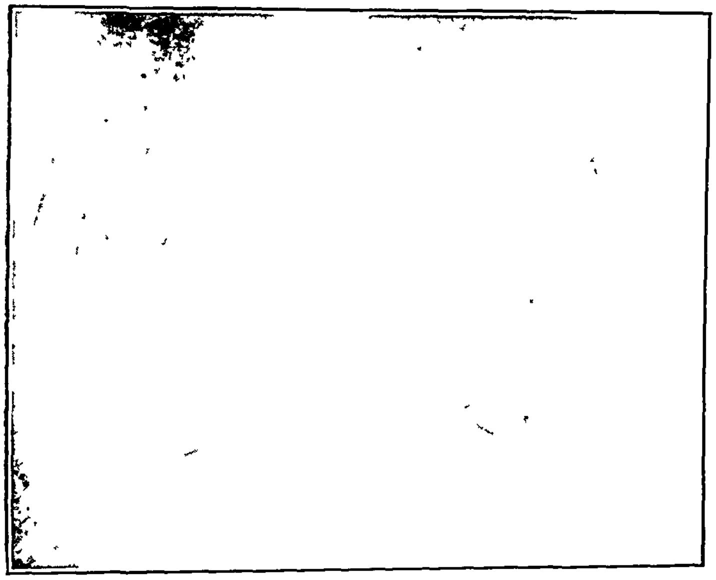

Fig. 5.—Exaggerated intermetatarsal space between first and second bones. Severe case prior to operation. The deformity has been accentuated in right foot by reason of amputation of second toe for hammer toe, done some years before.

The tendon of the long extensor of the great toe is cut and permitted to retract. To attempt to relocate it on the toe (Weir and Mayo) merely invites recurrence of the deformity while it serves no useful function. No one who wears shoes can suffer any inconvenience from the loss of this tendon. The sesamoid bones beneath are not disturbed.

The toe is now returned to its normal position and the capsule of the joint sutured loosely. The incision is closed with three or four silkworm-gut sutures and continuous lock-stitch 00 iodin catgut. Drainage is provided for with a few strands of No. 1 iodin catgut. A wet dressing of 1 : 500 liquor iodi compositus (Lugol's solution) is applied and a shallow cigar-box with top and one end removed is placed over the foot to protect it from the bed-clothes. In lieu of the box, a molded plaster splint (not cast) may be applied along the inner side of the foot to project beyond the toes and to which the great toe is bandaged somewhat inverted.

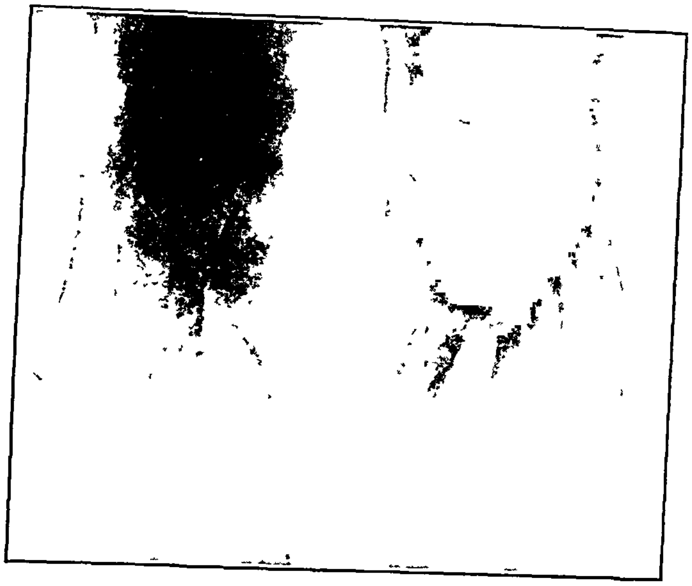

Fig. 6.—Same patient as Figure 5, one month after operation.

Some operators, notably Lovett,[4] seek to obtain firm union and ankylosis after resection of the joint in order to prevent recurrence. This interferes greatly with walking, as a natural gait involves flexion at this joint with each step.

812 North Highland Avenue.

# THE LOCAL SPECIFIC THERAPY OF INFECTIONS *

## II. TREATMENT OF CERTAIN INFECTIONS

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I propose to lay before you in this lecture the results already obtained by the method of local specific treatment of infection. They are derived partly from experiment and partly from experience with human cases of disease, and they relate chiefly, but not exclusively, to the infections of the membranes of the central nervous system which have formed the starting point of the studies on which the method has come to rest. It may be said, however, that the employment of the method is not limited to the cerebrospinal cavity, although the full extent of its application has still to be worked out.[1]

The reasons are perhaps obvious for utilizing the infections of the meninges as the point of first departure.

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[4] Lovett: Keen's Surgery, ii, 565.

* This is the second of two lectures which as here presented are based on the Harben lectures of 1912 given before the Royal Institute of Public Health, *London*, and the Trimble Lectures of the Medico-Chirurgical Faculty of Baltimore of 1913. The first lecture appeared in The Journal, Aug. 16, 1913, p. 447.

[1] Flexner: The Biologic Basis of Specific Therapy, Boston Med. and Surg. Jour., 1911, clxv, 709.

The method was originally conceived and put first into experimental and then into clinical practice during the early period of the epidemic of meningitis which visited this country about ten years ago. The general adoption somewhat earlier of the device of lumbar puncture had exposed the meninges in a particularly favorable way to the inspection of pathologic conditions affecting them. By the same means it was rendered possible to produce experimentally in monkeys local infections of the meninges reproducing the corresponding inflammations occurring in human beings which could now be followed closely in process of evolution and even of devolution. It is now an old story that by injecting living, virulent meningococci subdurally into monkeys a fatal acute meningitis is produced; and it is also well known that while the course of this experimental infection is not influenced by intravenous injections of an antimeningococcus serum, it is capable of being arrested and brought under control by direct intraspinal injections.[2]

It is unnecessary to present statistical and other data in order to support the contention that the antimeningococcus serum influences favorably the course of epidemic meningitis. The accumulated experience of the past six years during which its employment has grown in volume and extent until now it is in regular use in practically all countries, has demonstrated its value and made necessary a revision of certain notions concerning its action.[3]

Formerly no fundamental biologic distinctions were made between meningococci; now differences in power of resistance to solution by immune serum are being recognized. Under the influence of the serum injected into the subarachnoid space the diplococci come, as a rule, to lie more and more within the leukocytes; and as recovery from meningitis progresses, even though no antiserum has been employed, a corresponding phenomenon is noted. Indications exist, however, that certain examples of epidemic meningitis in man which respond imperfectly to the therapeutic action of the serum are caused by meningococci resistant or "fast" to the antiserum employed. These strains tend to remain persistently extracellular and to multiply freely in the presence of the antiserum, even under conditions of its high concentration in the meninges. The cases of human infection with the supposedly resistant strains fail not only to respond to the therapeutic action of the antiserum, but also, it can be inferred, more often to ameliorate spontaneously, and thus tend to a fatal termination.

Fastness seems to be capable also of appearing during the specific treatment, since in some instances the meningococci having been at first readily controlled by the injections develop resistance to the serum. This has been noted in certain cases of relapse going on to a fatal termination. Hence, under special circumstances the meningococci seem to acquire a serum-fastness that thwarts its specific action. The original "fast" strain is of uncommon, and acquired "fastness," at most, of occasional occurrence. It is not known whether merely one strain or many fast strains distinct from one another exist in Nature. Information on this point is highly desirable, as is the utilization of fast strains of the meningococcus in the preparation of the antimeningitis serum. Should a true polyvalent serum of high titer carrying immune bodies for the fast strains be developed it is probable that the mortality percentages from meningitis would come to be decreased still further.

Although at first regarded as doubtful it now appears that fulminant cases of meningitis are not wholly without the sphere of beneficial influence of the serum. This conclusion rests, first, on specific statements of recovery of cases of this kind under the influence of the serum and, next, on the change wrought by it in the mortality from the disease during the first three days of prevalence, which is the period during which the fulminant cases terminate in death.

The age factor affects the outcome of the specific treatment just as it affects spontaneous recovery from meningitis, only its influence is even more marked in the serum-treated cases. The most favorable conditions for the specific treatment are in patients between the ages of 5 and 20 years, and the least favorable ones fall in the period above 30 years. The exact coincidence of the favorable ages for spontaneous recovery and for recovery under the serum treatment indicates that the serum provides artificially the means the body itself employs, when it can fabricate them, to suppress the infection, and that two factors, one provided by the body and the other by the serum, cooperate in the end-result; while the greater number of cases terminating by crisis under specific treatment enforces the same conclusion.

The extension of the practice of lumbar puncture as an aid to the diagnosis of meningitis is serving to reveal the important fact that the influenza bacillus is a not infrequent cause of severe and usually fatal seropurulent cerebrospinal meningitis. The first observation on influenza bacillus meningitis was recorded in 1892, and Wollstein has recently collected from the literature fifty authentic cases, supported by bacteriologic investigation. Among this series of instances, which probably gives no adequate notion of the extent of the disease, the recoveries recorded, if fairly representative, indicate a fatality of more than 90 per cent., or one exceeded only by the tuberculous and pneumococcal infections of the meninges. Among the eight cases that came under Wollstein's attention, there was no survival. This affection, like the acute meningeal inflammations in general, is more prevalent among children than among adults.[4]

Influenzal meningitis is associated in many, if not in all, instances with influenza bacillary infection of the respiratory tract which, at certain seasons, becomes exceedingly frequent in children. The effects of the infection are various and commonly consist of a persistent bronchitis or the more severe bronchopneumonia. The bacilli can be cultivated from the bronchial mucus and, as thus obtained, possess, as a rule, but low virulence for laboratory animals. In these patients the influenza bacilli do not appear in the circulating blood. When the meninges are invaded an acute inflammation is produced, and the bacilli in the cerebrospinal fluid now show marked virulence for laboratory animals and often appear and multiply within the circulating blood.

The cerebrospinal fluid, removed by lumbar puncture, from human patients is always turbid, and deposits, on standing, a yellowish or whitish sediment, the supernatant liquid remaining nevertheless somewhat clouded. As the disease advances, day by day, the fluid becomes more heavily charged with pus-cells until toward the end, and as late as the seventh day of illness, the puncture may yield merely a viscid mass of purulent matter. The number of influenza bacilli present in the fluid is usually large; and the bacilli lie chiefly extracellular among the pus-cells, although a variable, but small, number is usually found ingested by the leukocytes. In morphology the bacilli vary somewhat and in this respect the observer may readily be deceived as to the nature of the bacteria present. While some of the fluids contain the typical, minute rods, others show quite irregular and knobbed or even filamentous bacteria that have little resemblance to the influenza bacillus as seen in recent cultivations. These bizarre or involuntary forms, however, are met in old and exhausted cultures; and when they are recultivated on a suitable hemoglobin medium, they yield the typical minute rods.

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[2] Flexner: Experimental Cerebrospinal Meningitis in Monkeys, Jour. Exper. Med., 1907, ix, 142. Flexner and Jobling: Serum Treatment of Epidemic Cerebrospinal Meningitis, Jour. Exper. Med., 1908, x, 141.

[3] Flexner: The Results of the Serum Treatment in Thirteen Hundred Cases of Epidemic Meningitis, Jour. of Exper. Med., 1913, xvii, 553.

[4] Wollstein: Influenza Bacillus in Inflammations of the Respiratory Tract in Infants, Jour. Exper. Med., 1906, viii, 681; Serum Treatment of Influenzal Meningitis, ibid., 1911, xiv, 73; Influenza Meningitis and Its Experimental Production, Am. Jour. Dis. Child., January, 1911, p. 42.

The cerebrospinal fluid removed, by lumbar puncture, from monkeys inoculated by subdural injection with virulent cultures of the influenza bacillus is at first turbid, then purulent, and contains a large number of the bacilli, also chiefly extracellular. The bacilli regularly invade the general blood from this source, from which they can be cultivated during life and after death. The average duration of life of the inoculated monkeys varies from thirty-six hours to several days, but, on the whole, is less than in human patients with influenzal meningitis, who may succumb in three or four days or survive two or more weeks. At necropsy a purulent exudate covers the surfaces of the brain and spinal cord, which is more delicate in the case of the experimental than of the spontaneous disease. The fluid in the lateral ventricles tends to be turbid; and from both sources numerous bacilli can be cultivated.

Hence it appears that in all essential points the experimental approximates closely to spontaneous influenzal meningitis. This fact once established, the question which immediately presented itself was whether the experimental affection could be controlled by means of a specific serum that was introduced directly into the seat of disease by intraspinal injection. By means of ordinary methods, first a goat and then a horse was immunized to the bacilli. It was ascertained that the normal blood contained neither agglutinin nor opsonin for the influenza bacillus. The first cultures injected subcutaneously were non-virulent strains, which failed to give rise to immunity principles. When virulent strains were substituted, agglutinins and opsonins began to appear. After several months' treatment they reached a considerable level, the opsonin always exceeding in quantity the agglutinin produced. The serum lacked bacteriolytic properties. At this juncture it was tested therapeutically.

The serum injections were made at various periods after the inoculation of monkeys and consisted in the injection of virulent cultures, in a previously ascertained fatal dose, into the membranes by lumbar puncture. The earliest period at which the serum was injected was five hours and the latest twenty-four hours after the inoculation. The bacilli had multiplied extensively and leukocytes and lymph had appeared in the cerebrospinal liquid. The bacilli were predominatingly extracellular. Two, three or four cubic centimeters of liquid were drawn off and replaced by the serum. According to the symptoms presented the injection of the serum was repeated after from twelve to twenty-four hours. Usually three or four injections sufficed to arrest the multiplication of the bacilli and to control the inflammation. The first evidences of favorable action on the part of the serum consist in a beginning increased ingestion of the bacilli by the phagocytes and, as shown by diminishing turbidity of the fluid withdrawn by the puncture, of retardation of the course of the inflammation. The symptoms disappeared more slowly than the evidences of infection. With each succeeding injection of the serum the local conditions in the membranes improved: the fluid withdrawn was clearer, contained fewer bacilli and those present were chiefly inside phagocytes; while the colonies developing in cultures were also diminished. The pus-cells, however, might disappear before the last bacilli since the perfectly limpid cerebrospinal liquid, taken from what appeared to be well animals, still yielded the bacilli in some instances. Ultimately they also disappeared entirely.

Let us now follow the events taking place in the blood-stream. The virulent bacilli pass quickly from the meninges into the blood, where they multiply. It is patent that unless the bacteriemia can be suppressed it would be futile to base hopes of success on the control of the meningeal inflammation alone. I have referred to the fact that infection of the meninges in children with influenza bacilli follows, usually, on a previous infection of the respiratory organs. It appeared in the course of the earlier control experiments that in the monkey the reverse effects may take place. That is, the bacilli brought by the blood to the lungs sometimes set up pneumonic inflammation there. It is necessary, therefore, to consider the consequences of the bacteriemia on the local treatment of the meningeal infection. Fortunately, the difficulties surrounding the passage of the antiserum from the blood into the cerebrospinal liquid are directly contrasted with the ease with which the antiserum escapes from the meninges into blood. This discrepancy is explained by the fact that while the fluid on entry is in the nature of a secretion from the chorioid plexus, the escape is by way of the veins in the membranes themselves. While, therefore, it is impracticable to bring the antiserum into the meninges from the blood, the reverse result is readily accomplished. Thus it happens that in such secondary infections of the circulation with bacteria as we are here considering, not only does the suppression of the primary focus of infection stop the eruption of the bacilli, which is the cause of the blood infection, but also the passage of the antiserum from the membranes into the blood arrests their development there.

The experimental results are obviously the beginning, merely, of the attack on the problem of the specific therapy of influenzal meningitis, and they will come to have merely theoretical, or the far more important practical, interest, according as they are in some degree applicable to the infection in human beings. At the outset it should be recognized that often influenzal meningitis is a secondary process that follows on a previous infection usually situated in the respiratory tract. Only experience can answer the question whether the control of the meningeal infection will suffice to save life in view of the influenzal lesions elsewhere present, and whether or not these also are favorably affected by the serum. The anti-influenzal serum is just now being issued for use in man. It has been applied too seldom in the treatment of influenzal meningitis to warrant any deduction but one, namely, that under its influence the bacilli in the cerebrospinal liquid diminish in number and are taken up more freely by phagocytes.

Pneumococcal meningitis, having also been opened up to experimental investigation, may be considered somewhat in the same manner. Meningitis is caused by the pneumococcus more frequently than by the influenza bacillus, and its mortality is certainly no less than in the latter disease. The two affections resemble each other in being secondary rather than primary infections. The pneumococcus infection follows on pneumonia, inflammations of serous membranes and infections of the nasopharynx, internal ear and mastoid cells. In other words, the pneumococcus penetrates directly to the cerebral membranes from an adjacent structure or is brought to them indirectly by the blood.

When a virulent culture of the pneumococcus is injected into the meninges of monkeys an acute meningitis results that presents the chief clinical and pathologic characters of the disease as it appears in man. It corresponds with the spontaneous disease further in ending with rare exceptions in death. While the course of the experimental affection appears to be the same, irrespective of whether the pneumococci are injected into the meninges of the brain or spinal cord, therapeutic tests have shown that the infection following on the former is far more difficult to control than that resulting from the latter. It is probable that in man, also, the early injury inflicted on the brain by the pneumococcus entering directly the cerebral meninges diminishes the chance of recovery.

Many attempts have been made unsuccessfully in the past to control pneumococcus meningitis by indirect and even by direct injections of an antipneumococcus serum.[5] It is quite impossible to tell from the rare recoveries whether or not anything of value was accomplished by the treatment. The case with the experimental disease is quite different. Rhesus monkeys can be made to develop regularly a fatal form of meningitis through subdural inoculation in the lumbar region of a suitably virulent culture of the pneumococcus. The inoculation is followed by an incubation period of several hours, after which the animal gradually falls ill. The symptoms intensify and death results in from twenty-four to seventy-two hours after the inoculation.

The subdural injection of antipneumococcus serum may produce no effect whatever or may delay somewhat the fatal result; it does not prevent it. Whether any or no action whatever is exerted by the serum depends not on the stage of the disease so much as on the particular quality of the serum employed. I referred in the previous lecture to the fact that the pneumococcus is one of the parasitic micro-organisms that flourishes in Nature in more than one form. In fact, it is now known to occur in several independent forms which resemble one another in cultural and differ from one another fundamentally in immunity reactions. It is only when the type of infecting pneumococcus and corresponding immune serum are brought together that any effect whatever is produced on the multiplication of the parasites within the meninges and the steady progress of the disease. Ultimately, even under these favorable conditions, the infected monkeys die. Is it possible by any known means to avert the fatal result? This question can now be answered affirmatively and for the reasons that I shall relate.

The factors considered in the past responsible for spontaneous recovery from infectious diseases consist of the blood antibodies and phagocytes. Probably other elements participate in the process and in special definite chemical substances that are always present in a focus in which tissues and cells are disintegrating. That various cells of the body yield, on extraction, substances capable of dissolving red corpuscles and destroying bacteria and differing markedly from the antibodies of the blood has long been known. Leukocytes contain and give up to solvents thermostabile bactericidal chemicals of considerable potency. A long line of special investigations deals with this subject, the full significance of which is not yet appreciated. The thermostabile bactericidal and hemolytic substances yielded by the cells of the organs on extraction and autolysis are in part identical with the leukocytal bactericides and have been identified as soaps of the higher unsaturated fatty acids.

Considerable significance may attach to this observation. It has long been known that soaps appear in inflammatory foci and in degenerating tissues; and the calcium salts deposited in obsolete necrotic lesions are united, in part, with fatty acids. Recent inflammatory foci contain lipase and, of course, disintegrating leukocytes and tissue elements. The latter yield both neutral and higher phosphorized fats, or lecithin-complexes, from which the lipase is capable of liberating fatty acids. This reaction, moreover, is not restricted to inflammatory foci purely and to cells obviously degenerating and disintegrating. That it takes place in a much more subtle way is shown by observations made on the liver. The normal organ yields less than one-half its fat on simple extraction, the remaining part being bound to the protein so firmly as to require digestion or denaturation of the latter to release it. The liver in phosphorus or toluylendiamin poisoning, on the other hand, gives up its fat to simple solvents, and a part of the fat has already been converted, during life, into glycerol (glycerin) and free fatty acids. The liver in acute yellow atrophy likewise contains an excess of free unsaturated acids, and the lung in acute lobar pneumonia yields both the free acids and lipoidal substance.

The quantity of bactericidal bodies yielded by cells in process of disintegration may be considerable, therefore, so that it may well be that the dissolution of tissue-cells and leukocytes that often results from a local bacterial infection may be not entirely to the advantage of the parasite since the chemical substances liberated themselves exert an injurious action on the infecting bacteria.[6]

The study of the manner of reaction of pneumococcus cultures to oleate soaps has illumined the subject. The effects of sodium oleate are representative of the class of bactericidal soaps. In solutions of from 0.5 to 1 per cent. the chemical rapidly kills the pneumococci, which are converted into a formless viscid mass. In solutions of, say, 0.1 per cent. the pneumococci survive, but they have been rendered more subject to dissolution by autolysis than untreated pneumococci. The acceleration of the autolytic process is so great that a few hours suffice for complete disintegration of the micro-organisms. Still weaker concentrations—say, 1 part of the soap in from 10,000 to 20,000 parts of water—produce no obvious alterations: the bacteria retain normal form, staining and power to grow in cultures. And yet the autolytic reaction is heightened; but still more significant is the fact that the pneumococci have become subject in remarkable degree to serum lysis and particularly to immune serum solution. This phenomenon is of considerable theoretical interest since it shows that a bacterium may be altered by chemical action in such a subtle way that while it retains all its obvious biologic properties apparently intact, it may yet be changed profoundly in its chemical reactions.

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[5] Lamar: Chemo-Immunologic Studies on Localized Infections, Fourth Paper, Experimental Pneumococcic Meningitis and Its Specific Treatment, Jour. Exper. Med., 1912, xvi, 581.

[6] Lamar: Chemo-Immunologic Studies on Localized Infections, First Paper: Action on the Pneumococcus and Its Experimental Infections of Combined Sodium Oleate and Antipneumococcus Serum, Jour. Exper. Med., 1911, xiii, 1.

The soaped diplococci exhibit still another profound change. They have lost in some degree their virulence for mice and rats. The retained virulence is, however, always sufficient to cause septicemia and death of the inoculated animals unless, indeed, immune serum has been injected along with the culture. The course of events in rats injected into the peritoneum is instructive: in the control animals the unsoaped diplococci begin to multiply rapidly, there is almost no emigration of leukocytes and death occurs in eighteen hours. The addition of an immune serum alone to the untreated diplococci does not save life. The soaped diplococci suffer, within four hours of the inoculation, a considerable diminution in number; but multiplication sets in later, leukocytes in numbers remain absent from the exudate, no phagocytosis occurs and death results in thirty hours. The addition of a normal serum does not change this result essentially. When an immune serum is substituted, however, the diplococci are quickly suppressed, and no subsequent multiplication whatever takes place; no more leukocytes migrate than in the other instances, but the animals fail to become ill. Hence the conspicuous fact that oleate soaps act in a peculiar manner on pneumococci, rendering them subject to serum lysis not only *in vitro* but equally *in vivo*, and coincidently enabling an immune serum to remove their pathogenic action. This important final action of the immune serum takes place only when there is correspondence between the type of infecting pneumococcus and antipneumococcus serum employed.

Before proceeding to the consideration whether these observations are capable of being put to therapeutic use, let us consider for a moment the question of the manner in which pneumococci disappear from the pneumonic exudate and ascertain whether any analogies with the preceding phenomena can be detected. We know that the diplococci undergo a form of autolysis in the exudate and that they likewise are diminished in virulence, and we have seen that these are equally the effects which soaps produce. The other factor necessary to reduce still further the pathologic action of the parasite is a specific immune serum which is provided by the antibodies that appear in the blood in the course of the pneumonic attack. The theoretical conditions are therefore obviously fulfilled for the bringing about of the dissolution of the diplococci in the affected lungs. There is now presented, however, a serious obstacle to the working out of this relationship. The hemolytic and bacteriolytic effects of the soaps of the unsaturated fatty acids are inhibited by protein matter such as exists in the serum of the blood or of exudates. This inhibition must first be overcome before the lytic action can take place. Just how it is set aside, if at all, within an exudate is not known; but it is worth while to consider factors that may possibly suffice to remove the impediment, among which are the proximity of the bacteria to the nascent fatty acids and soaps, and to suggest the existence there of other chemical substances that may have the effect of removing the protein inhibition. The inhibition can be prevented in the test-tubes and also in the animal body by adding a third constituent of a protective nature, which in this instance may be boric acid. A minute quantity of this chemical prevents the union of soap and protein matter when the latter is not in too great excess.[7]

This finding has made it possible to employ mixtures of sodium oleate, antipneumococcus serum and boric acid in the treatment of established pneumococcus infections. In this way the intraperitoneal inoculation of highly virulent cultures in rats has been brought under a measure of control. The peritoneal cavity, however, because of the variety and complexity of the contained viscera, and the ready isolation of foci of infection impossible to be reached locally, make success in that site, in very small animals, difficult to achieve. Hence, we have again turned to the meninges, the subarachnoid spaces of which are better adapted to the purposes of experiment, with the results to be mentioned.

It is possible to cause pneumococcus meningitis by injecting a culture of suitable virulence into the membranes of monkeys by lumbar puncture. Since the infection set up should, on the one hand, terminate fatally in the controls and, on the other, insure the survival of the animals for two, three or more days, in order to afford average conditions for the operation of the therapeutic agent, the culture and the dose must be accurately worked out. This having been done, it can now be shown that the injection of an optimum mixture of sodium oleate, boric acid and immune serum, by lumbar puncture, into the cerebrospinal membranes is capable of rescuing many infected monkeys, eight, twelve, eighteen and even twenty-four hours after the inoculation and at a time when the number of the diplococci present in the exudate is large and the animals are critically ill.[8]

The effect of the mixture is striking. Within three or four hours of the first injection the diplococci have undergone an enormous diminution in numbers, and phagocytosis, previously entirely absent, has begun to take place. The injections are repeated at intervals of from twelve to twenty-four hours for several days and until all pneumococci have disappeared from the membranes and the fluid has again become clear and limpid. The success of the treatment depends in considerable part on complete suppression of the pneumococci, as shown by cultures and by direct microscopic examination, since the infection in the monkey shows a strong tendency to relapse; and a relapse that is not promptly treated and controlled is quickly fatal. On this account extra vigilance is called for; and the seemingly wholly restored animals need to be kept under close scrutiny for several days longer, the general condition, appetite and temperature being closely observed. As already stated, the antipneumococcus serum alone has proved powerless to bring about recovery.

Monkeys that are inoculated subdurally with pneumococci quickly develop a bacteriemia; and it is of great practical significance that with the control of the meningitis the blood infection also disappears. The number of diplococci that sometimes appears in the blood is so large as to indicate multiplication there; but so long as a secondary inflammatory focus does not arise, this state is controllable along with that of the meningitis. In rare instances secondary pneumococcus pneumonia or even peritonitis arose; in these the bacteriemia persisted

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[7] Von Liebermann and von Fenyvessy: Ueber die gegenseitige Aktivierung hämolytisch unwirksamer Stoffe, Ztschr. f. Immunitätsforsch., Orig., 1909, ii, 136. Lamar: Jour. Exper. Med., 1911, xiii, 1.

[8] The therapeutic mixture consists of the following constituents per cubic centimeter:

| | c.c. |
|---|---|
| Antipneumococcus serum (corresponding type) | 0.2 |
| 5 per cent. aqueous solution boric acid | 0.75 |
| 2 per cent. aqueous solution sodium oleate (Kahlbaum's or Merck's) | 0.05 |

The mixture is freshly prepared for each injection; it should, of course, be sterile. The dose injected into monkeys averaged 2 c.c. For man it has still to be worked out, but may be from 10 to 20 c.c. and possibly even more. The usual precautions employed in making intraspinal injections, such as previous withdrawal of cerebrospinal fluid and careful and controlled administration, should be observed.

and there was a fatal issue. In some instances a fatal issue has followed on the dissociation of the spinal and cerebral membranes by means of an impassable exudate at the foramina at the base of the brain. This is the common condition arising in epidemic meningitis that has hitherto defeated the curative effects of the antimeningitis serum and is now being overcome by means of direct intraventricular serum injections.

It is obvious that under the conditions stated sodium oleate exhibits a greater affinity for pneumococci than for either ordinary protein matter or the protein constituents of the cells of the nervous organs; for under circumstances in which boric acid withholds it from the latter it still attacks the micro-organisms. This is a condition relating to all drugs employable as curative agents; they must show greater action on the parasites than on the cells of the organs, else they may do harm rather than good. The oleates thus far have been observed to exert their peculiar action on pneumococci irrespective of race; but they have needed to be assisted by immune serums of strict correspondence in origin with the race of infecting diplococcus. Morgenroth[9] has recently prepared a drug, ethylhydrocuprein, related to quinin, which possesses remarkable powers of overcoming pneumococcus infection in mice. Under its influence, however, strains refractory to the drug arise; and probably rare races fast to the chemical occur in Nature.[10] Because of its high toxicity for human beings, however, the drug is inapplicable to the treatment of pneumococcus infections in man.

A small number of tests of the oleate, boric acid and immune serum mixture have been made on human cases of pneumococcus meningitis and the observations on monkeys so far confirmed as to prove the necessity of employing an immune serum agreeing in race with the infecting micro-organism. When this correspondence is accomplished, the pneumococci within the exudate are diminished rapidly by solution and phagocytosis; when it fails, no action on the pneumococci has been detected.†

The conditions are somewhat different with another group of affections of the nervous system which I shall now discuss. The fact has long been regarded as notable that notwithstanding the origin of tabes and paresis from syphilitic infection those diseases respond so little favorably to antisyphilitic measures of treatment. Partly for this reason and partly because of the characters of the pathologic changes, they have been separated off from the typical varieties of syphilis and placed in a special category of metasyphilitic or parasyphilitic affections, so called. Now that the *Spirochaeta pallida* has been shown by Noguchi[11] to occur in numbers in the brains of paretics and has even been found in the spinal cord in tabetics, this classification calls for complete revision.

In the meantime how is the disparity in therapeutic response of these affections to be explained? First, it may be mentioned that there is growing evidence that salvarsan, injected into the blood, may exert a beneficial influence in tabes, but not in paresis. The evidence is derived partly from clinical improvement and partly from the reductions in the cellular and protein contents of the cerebrospinal fluid, and the diminution of the Wassermann reaction. These changes are in accord with the inconstant and fleeting presence of arsenic in the fluid following the intravenous, but not the intramuscular injection of the drug.[12] Hence it would appear probable that better results still might be accomplished provided the drug could be brought with certainty and in suitable concentration into this fluid. Such a method of application, worked out by Swift and Ellis,[13] offers considerable promise of high therapeutic value.

The pathogenesis of tabes is still unsolved. What seems established is that the lesions of the spinal cord and the clinical symptoms are dominated by pathologic states of the meninges. It is known that in most cases of the disease the cerebrospinal liquid contains the products of irritative or inflammatory conditions existing within the membranes; and microscopic study has revealed areas of chronic meningitis about the radicular portions of the spinal and corresponding portions of cranial nerves. To reach the pathologic processes in the membranes, not in tabes only but in paresis as well, is made peculiarly difficult because not only do we have to reckon with the ordinary conditions of impenetrability of the meninges, but there often coexists also an obliterative arteritis of syphilitic origin.

It is not safe to introduce salvarsan directly into the subarachnoid space, and while neosalvarsan, because of its ready solubility, is less injurious, yet the direct injection of that drug is attended with certain risks.[14] Swift and Ellis have therefore taken advantage of the circumstance that the blood of salvarsan-treated patients is itself curative, and they have employed the corresponding serum, suitably diluted, for intraspinous injection. The results are both promising and striking. The local irritative condition in the meninges becomes quickly diminished, the Wassermann reaction reduced or abolished and the clinical state of the patient improved. These effects follow even when the salvarsanized blood of other persons is employed for intraspinal injection. They are due, therefore, to the local and not to the general treatment.

This method has not yet been applied to the treatment of paresis, and nothing less than a careful and thorough trial can determine its applicability. Certain theoretical facts, however, stand well in the foreground. It is known, for example, that the cerebrospinal liquid provides a means of direct and immediate contact with the structural tissues of the brain.[15] Whatever chemical is introduced into this liquid will inevitably find its way to the supporting elements, the nerve-cells and fibers of the cortex in which the main lesions of paresis are situated. It is in the cortex likewise that the *Spirochaeta pallida* has now been found, from which it follows that this organism can best be brought under the influence of curative agents through the same channel of communication.

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[9] Morgenroth and Levy: Chemotherapie der Pneumokokkeninfektion, Berl. klin. Wchnschr., 1911, xlviii, 1560. Morgenroth: Zur Chemotherapie bakterieller Infektionen, Berl. klin. Wchnschr., 1912, xlix, 663.

[10] Morgenroth and Kaufmann: Arzneifestigkeit bei Bakterien (Pneumokokken), Ztschr. f. Immunitätsforsch., Orig., 1912, xv, 610. Boehncke: Beobachtungen bei der Chemo-Serotherapie der Pneumokokkeninfektion, München. med. Wchnschr., 1913, lx, 398.

† It is obvious that to be practical it becomes necessary to possess a method of rapid identification of the type of infecting pneumococcus. A method of this kind is provided by the agglutination reaction as given by Dochez and Gillespie (A Biologic Classification of Pneumococci by Means of Immunity Reactions, THE JOURNAL A. M. A., Sept. 6, 1913, p. 727). Moreover, it will also be necessary to have available either separate immune serums corresponding to the main biologic types of pneumococcus or an efficient polyvalent serum of high titer.

[11] Noguchi and Moore: A Demonstration of Treponema Pallidum in the Brain in Cases of General Paralysis, Jour. Exper. Med., 1913, xvii, 232.

[12] Sicard and Bloch: Perméabilité méningée à l'arsénobenzol, Compt. rend. Soc. de biol., 1910, lxix, 624.

[13] Swift and Ellis: The Direct Treatment of Syphilitic Diseases of the Central Nervous System: A Preliminary Communication, New York Med. Jour., 1912, xcvi, 53. Wechselmann: Ueber intralumbale Injektion von Neosalvarsan, Deutsch. med. Wchnschr., 1912, xxxviii, 1446.

[14] Personal Communication from Dr. Swift. Marinesco: Behandlung syphilitischer Erkrankungen des Nervensystems mittels intra-arachnoidealer Injektion von Neosalvarsan, Ztschr. f. diätet. u. physik. Therap., 1913, xvii, 194. Ellis and Swift: The Effect of Intraspinous Injections of Salvarsan and Neosalvarsan in Monkeys, Jour. Exper. Med., 1913, xviii, 428.

[15] Mott: Oliver-Sharpey Lectures, The Cerebrospinal Fluid, Lancet, London, 1910, ii, 1, 79.

more active. Whether or not a sac that has once contained a loop of intestine or omentum may spontaneously close cannot be definitely stated. Why peritoneal surfaces become spontaneously obliterated during fetal life and soon after birth is unknown. It is not possible to prove that obliteration can be caused by any artificial means. It is maintained by many, however, that some do close spontaneously. The proportion cannot be even approximately stated, for it is quite impossible to keep these patients under observation. From the evidence at hand it is more likely that even when the hernial contents cease to descend the canal remains patent and is always ready to be filled whenever there is a weakening of the muscle or an unusual increase in intra-abdominal pressure. Stiles has demonstrated that in the so-called cures the sac remains patent and only awaits favorable conditions for the reappearance of the hernia. Kovacs[7] believes that it is but rarely if at all that a hernia becomes spontaneously cured.

If a hernia is allowed to go untreated, strangulation with its attendant dangers is always possible. Usually even strangulated hernias can be reduced after a time and death from strangulation is very rare.

### PROGNOSIS UNDER TREATMENT

Treatment by means of the truss does not materially alter the course. The purpose of a truss is to retain the hernial contents within the abdomen and permit the surrounding tissues to regain their elasticity. There is nothing in the physiology or adaptive pathology of the peritoneum to warrant us in the hope that keeping the canal empty by means of a truss will cause the sac to become obliterated. That the pressure of the truss may cause sufficient irritation of the opposed surfaces of the sac to cause them to become adherent is of course beyond the possible. At the same time it is necessary to give respectful attention to the palliation of hernia by means of the truss. Two recent books on surgery in childhood favor this treatment within rather wide limitations.

It has been estimated that approximately 25 per cent. of patients treated with the truss are temporarily cured by it. That is to say, after being worn for several years the truss may be left off without a return of the hernia for a period of years. Subsequent history is difficult to obtain, for it is quite impossible to maintain a record throughout the patient's lifetime, and those who advocate truss treatment make no attempt to answer the question as to the future of the so-called cured cases. One meets, however, patients with hernias in later life who give a history of hernia in childhood, which had been apparently cured by a truss. One is therefore inclined to look on the curative value of the truss with skepticism.

The truss has been used for infants only a comparatively short time. It was formerly thought inadvisable because of the disposition to favor troublesome eczemas and even fatal gangrene. Ravoth,[8] as late as 1868, found it necessary to combat this view. As a matter of fact, however, if one entertains seriously the notion that a sac can be obliterated by the pressure of a truss, troublesome excoriations and even graver lesions are very likely to appear. The younger the child the more difficult it is to keep a truss applied.

Most practitioners content themselves by the use of the well-known skein truss. These more often hide rather than retain the hernia. In fat babies spring trusses are kept on with great difficulty and elasti trusses with perineal straps are apt to cause troublesom excoriations. In thin, emaciated babies better result may be obtained. After from three to six years, depending on the activity and build of the child, a truss can b made to retain the hernia with a certain degree of efficiency. The abuse of the truss comes in allowing the child to bear the discomforts of a steel band carrying a pad which rests somewhere in the region of McBurney's point. This gives a false sense of security and unnecessarily punishes the child, especially when a strong spring is used with the idea of obliterating the sac by pressure. The whole development of the child, mental and physical, may be retarded by a troublesome hernia or an ill-fitting truss.

Operative treatment has gradually come more into use in recent years. This is due to the more general appreciation of the anatomic relations of hernia and to a perfected technic in its radical cure.

Palliation is still largely practiced chiefly by two classes of persons; those who are opposed to operation by principle and those who employ palliation from necessity, either because the parents do not consent or because facilities are not available. Those who oppose radical cure from principle may be divided into two classes, those who still believe that hernia may be cured by the truss and those who have met disaster in radical treatment. Among the latter may be mentioned Grunert,[9] who had three deaths in thirteen patients. He advises against operation during the first three years.

Palliation will still retain a large number of advocates because of necessity, especially in regions in which operative facilities are not available.

A considerable number of operators advise operation in all or nearly all cases. Perhaps Stiles[10] has spoken with the clearest vision and the greatest authority. He operated on 360 patients. Of these, one died of infection, one from chloroform, one from gangrene from too vigorous manipulation made elsewhere and two from causes not given—five in all. There were four recurrences. Kovacs[7] had 232 cases with one death from imperfect technic. In 144 cases traced there was one recurrence. Castenholz[5] advises operation in all cases, because it is the only means of cure and because by curing the trouble in childhood when time is worth but little, the patient is spared incapacitation in later years when the struggle for existence is on. Pfaehler[11] advises operation in all cases. He had one recurrence and no deaths in forty-six cases. He treats them as ambulants, the patient being brought to the hospital only for operation and returned home immediately afterward.

More conservative are Coley and Bull,[12] who, after an experience of 1,500 cases, advise operation after truss treatment of one or two years. Earlier operation is done if there are frequent strangulations, if the hernia is irreducible or complicated with hydrocele. In femoral hernias operation is always done. Buford[13] likewise does not operate before the fourth year, except in emergencies. Maass[14] is likewise disposed to be conservative because of the dangers of the operation. He operates only when the hernia increases in size, when there is troublesome eczema or when the parents are unable to care properly for the child. The reason for this conservatism is the danger of chloroform and the danger of injuring the vas and the vessels of the cord with subsequent necrosis of the testicle. Coley agrees with Maass that the operation is more difficult than in adults.

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[7] Kovacs: Arch. f. klin. Chir., 1910, xci, 177.

[8] Ravoth: Berl. klin. Wchnschr., 1868, v, 470.

[9] Grunert: Deutsch. Ztschr. f. Chir., 1903, lxviii, 518.

[10] Stiles: Brit. Med. Jour., 1904, ii, 812.

[11] Pfaehler: Deutsch. Ztschr. f. Chir., 1912, cxvi, 543.

[12] Coley and Bull: Med. Rec., 1905, lxvii, 401. Coley, William B.: The Management of Hernia in Infancy, with Results of Operative Treatment, THE JOURNAL A. M. A., Jan. 14, 1905, p. 112.

[13] Buford: Illinois Med. Jour., 1910, xviii, 17.

[14] Maass: Deutsch. med. Wchnschr., 1901, xxvii, 148.

The point of view of those who operate is, therefore, largely influenced by results achieved. Those who advocate operation must answer both for deaths and for failures, and these factors are both still large enough to dampen enthusiasm. Hernia in children rarely causes death and it devolves on the advocates of operation to show a mortality less than that of the untreated cases. Statistics are not sufficient to determine the point. Stiles[10] estimates that 7 per cent. of all children visiting the clinic (Polyclinic at Edinburgh) have hernias. His mortality was nearly 1.5 per cent. Castenholz[5] estimates the mortality at 0.3 per cent. Those who can show a mortality so low as this are justified in advocating operation, without reserve.

That operation *per se* is without danger is evident, and it is only the surgical accidents that make us pause. Thrombosis after operation has not been observed. Death from chloroform, so often complained of by the Germans, can be avoided by giving ether. Lung complications and intestinal disorders may appear merely coincident with, or because of, the operation; it is impossible often to say which. Injury to the vas and cord is purely a technical error and should not occur, at least not more than once. The surgeon's obligations resolve themselves into a question of asepsis. The delicate skin does not admit of rigorous cleansing and the difficulty of sterilizing a urine-soaked skin is considerable. The greatest difficulty, however, is in keeping the wound clean after operation. Collodion dressing is often inefficient to protect the region. It is this difficulty in keeping the parts clean that has caused many operators to prefer to wait until the child has reached an age when it can cooperate in the matter of cleanliness. After the child has attained the age of 3 or 4 years, spontaneous cure or disappearance for any considerable time is unlikely After this time the child is more likely to be conscious of his handicap, and the desirability of a permanent cure is proportionate to the degree of discomfort and the sensibility of the child. The operation is entirely safe and the cure nearly certain.

The type of operation likewise is subject to differences of opinion. If the patent canal is the only factor, those who advise a simple ligation of the sac are right. Castenholz closes the canal only when it is wide. Stiles believes that the Bassini technic is not needed, because of the shortness of the canal. Coley's experience is in favor of the regular Bassini.

Ambulant treatment is readily applicable and places the operation within reach of many who could not otherwise avail themselves of it. Castenholz sees his patients only after a week or ten days when it is desired to remove the stitches. This shows a confidence in the integrity of the dressings which is not warranted by the experience of most operators; but if the dressings can be observed from time to time Castenholz' method is a very efficient one. My own experience has been that the ambulant treatment is more satisfactory in children after four years than in infants. In the latter, no matter how careful the dressing, trained supervision is required.

## SUMMARY

1. All inguinal hernias in infants are due to persistence of the processus vaginalis.

2. Inguinal hernias are not cured by the truss and rarely recover spontaneously.

3. Surgery is permissible in all cases if the facilities are of the best and the operator is skilful. Operation is urgent if the hernia protrudes persistently or if the child is annoyed greatly by retentive appliances which lessen his activities or produce excoriations. Operation is demanded if the hernia is irreducible or strangulated.

4. Because of the difficulty of maintaining an aseptic field after operation it is wise conservatism to wait until the child has reached such an age as will enable him to lend his cooperation, that is, until about the fourth year.

5. Palliation is demanded when organic disease is present or adequate facilities for operation are not at hand.

Rialto Building.

## ABSTRACT OF DISCUSSION

**Dr. Coleman G. Buford**, Chicago: The treatment of hernia of infancy is nearly always considered and discussed with that of children in general and consequently there is great confusion. Hernia in infants is one thing, while that in older children is another. I shall try to limit my remarks to the former.

I admit that a large number of cases are *congenital*; but I have been surprised at the large percentage of supposedly congenital cases showing anatomic evidences of being acquired hernia.

The question of whether or not to operate on uncomplicated inguinal hernia in infants was definitely settled in America by the writings of Bull and Coley, based on almost unparalleled experience and statistics. Their conclusion was that children under 4 years of age should not be operated on for uncomplicated inguinal hernia until truss treatment had been used intelligently for four years. We have endeavored to follow this rule in my service at the Children's Memorial Hospital; but in older children we are inclined to shorten the period of truss treatment.

Babies should not be operated on as a routine because of their susceptibility to infectious diseases when brought among other sick children; diphtheria, scarlet fever, measles and erysipelas appear too often when least expected. Again, male babies are especially liable to wound infection when herniotomized, because of the wound's close proximity to the genitals and anus. Babies are susceptible to the damages of pyogenic infection; even stitch-hole abscesses may easily be the indirect cause of the death of an infant.

I usually refuse to operate on children until (1) they are of such an age and state of intelligence as to aid in keeping their dressings and bedding clean; (2) a complication not easily corrected arises, such as strangulation or existence of an incarceration; (3) failure to retain the hernia by a correctly fitting truss occurs; (4) parental neglect persists, and (5) parents insist on the operation.

We do the Bassini operation on all infants, using one and never more than two sutures to close the posterior wall, catgut closure for the external oblique and horsehair for the skin. Our skin incisions rarely exceed 1¼ inches.

How shall we dress these? Not with a fluff and spica; but with a thin pad of gauze, the length of the wound, over which we place a gutta-percha covering which is sealed to the skin by collodion. After drying, in male babies, we use an apron or watershed of the same material, sealed to the pubes and dropped over the penis, so that the urine is diverted from the wound. Covers must not rest on the dressing. Infants are put in the regular hospital bed, which is surrounded and covered by one or more layers of sheeting, dropped to the floor, thus cutting off the under draft of air. The bed may be heated with hot-water bags hung as radiators. The child wears stockings and a shirt which does not extend below the navel, thus avoiding wetting and contact with the dressing.

The patients not operated on are treated by the use of trusses. Our results are satisfactory and there are few returns. We use the cross-body truss for all single and Hood's truss for double hernias. The material should be hard rubber, the strap excepted. When straps are wet they should be changed. The truss should be washed and dried once or twice daily and oftener if soiled; it will then give off no odors. The skin should be kept hard by hand friction and dusting powder. The truss must be worn day and night for curative purposes. It must fit properly; fit it yourself. It must not make pressure or cause friction sores; it must retain the hernia under all conditions.

# THE HOSPITAL MANAGEMENT OF CONTAGIOUS DISEASES *

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It has long been believed, and still is, that the so-called "contagious diseases," comprising such diseases as scarlet fever, diphtheria, whooping-cough, measles, small-pox, chicken-pox, mumps and rubella, are to a large extent contracted by aerial transmission. Much evidence against this view has accumulated during the last few years and one purpose of this paper is to discuss this evidence.

It is only the practical experience of the hospitals of England and France and the Providence City Hospital that will be presented to show the importance of contact infection and the relatively small factor, if any, of aerial transmission. The paper is not based on laboratory findings.

The French were the first to doubt the theory of air-borne disease and the importance of controlling contact infection. To Grancher of Paris belongs the credit of being one of the first to put these ideas into practice. He isolated contagious diseases in the wards of a general hospital. Wire screens were placed about the beds to indicate that certain precautions were to be taken in handling these patients. These precautions were based on the method of strict asepsis. From 1890 to 1900, among the 6,451 patients admitted to Grancher's wards, diphtheria was introduced forty-three times and only once did the disease develop in the ward; scarlet fever was introduced nineteen times and seven cases developed. Less success was obtained with measles, although infections were reduced two-thirds. The evidence was, however, conclusive enough to convince Dr. Grancher that even measles was not spread by air.

Out of this simple but important beginning have developed various methods of construction for segregating the various diseases. Aseptic nursing is employed, whatever the type of separation. Some disregard air separation; others aim to interrupt, partially or wholly, air exchange between compartments occupied by patients. All plan to establish physical separation and to prevent contact. Out of Grancher's method developed the barrier system which is largely used in England. This is the method of isolating patients in a common ward. The beds are generally placed on centers 12 feet apart. In the beginning, the beds were surrounded by sheets kept wet with bichlorid of mercury. At present the wet sheets have been dispensed with and the bed is marked in some way. In one hospital, two uprights are set on the floor, one on each side of the foot of the bed, and a cord of colored tape is stretched between. This serves merely to indicate to nurses that precautions are to be taken.

Another method is the so-called cubicle system. The cubicles are small rooms with partitions more or less complete. In many instances the partitions are about 7 feet high. They are of silicon-plaster, glass, or a combination of the two. The rooms are arranged either on one side or on both sides of a common corridor, or sometimes in England, old wards have been cut up into separate compartments by partitions which do not reach the ceiling, all compartments being ventilated from the common air-space above. The cellular block system consists of rooms back to back with glass partitions; access to the rooms is from verandas.

Permit me to report some of the results in English hospitals where medical asepsis has been tried since 1907. In the Plaistow Hospital, Dr. Biernacki has been using the barrier system extensively, as well as the cellular block system. Dr. Biernacki writes that he would isolate the following diseases with the barrier system:

1. Diphtheria.
2. Whooping-cough.
3. Mumps.
4. Rubella.
5. Typhoid fever.
6. Septic infections.
7. Ringworm, except when not additional to scarlet fever.

He does not attempt to isolate measles or chicken-pox, and hesitates to do so with scarlet fever. In his cellular block system all of the before-mentioned diseases are treated as well as typhus. In the block there has been no cross-infection for three years. He quotes no statistics relative to his barrier work, as he has not reached a final decision as yet.

Dr. F. Foord Caiger, medical superintendent of the South-Western Hospital, London, reports on eighteen months from Jan. 1, 1907, to June 30, 1908, on the cubicle system. The partitions are 7 feet high, the lower half being granite silicon-plaster and the upper half glass in a metal frame. Seven hundred and four patients were placed in these cubicles, of whom 289 were scarlet fever convalescents who were placed in them two days and nights before their discharge. The remaining 415 were isolated in them for the following reasons:

1. The original diagnosis was uncertain.
2. The disease, though recognized, was one that called for separate isolation.
3. The patient had been exposed to another disease prior to admission and therefore was possibly incubating a second disease.
4. The patient was suffering from more than one infectious disease.
5. The disease was obviously of a non-infectious nature.

In addition to the 289 convalescent scarlet fever cases referred to above, the following diseases were placed in cubicles:

Scarlet fever, 163 cases, in the eruptive stage of the disease.
Rubella, 82 cases.
Measles, 22 cases.
Diphtheria, 31 cases.
Whooping-cough, 17 cases.

Of these 704 patients, twenty developed a second disease in the cubicles. Three of this number, however, were incubating the disease on admission and a fourth was infected by a ward maid who was suffering from diphtheria. Of the sixteen diseases arising in the cubicles,

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* Read in the Section on Diseases of Children of the American [illegible] at the Sixty-Fourth Annual Session, held at [illegible] 1913.

six were scarlet fever, six were chicken-pox, two were rubella, and two were measles. In two instances, one chicken-pox and one measles, there had been no recognized case of the same disease previously in the ward for a period of six weeks and two months respectively. Thus only fourteen persons apparently contracted another disease from patients in the cubicles. It will be seen that no case of whooping-cough or diphtheria developed. Dr. Caiger concludes that of all the before-mentioned diseases, chicken-pox is the only one which he has ceased to put into cubicles because of the six cases arising in the first six months of the period reported on. In his 1911 report he speaks as follows:

> The incidence of secondary infectious disease among the 269 patients treated in cubicle wards was 1.8 per cent., whereas in general wards it was 7.6 per cent. In addition to these 269 patients, chicken-pox and measles being the only excluded, 177 scarlet fever convalescents were placed in one of the cubicle wards for the last two days and nights of their stay in the hospital. In all, 2,547 patients have passed through the cubicles during the five years they have been in use. As an extension of isolation provision they have proved of the utmost service.

Dr. Thompson of the North-Eastern Hospital, London, reports on an experience of two years with the cubicle and box-room system. To the cubicles, 1,290 patients were admitted. The following cross infections have developed:

| | Cases | | Cases |
|---|---|---|---|
| Scarlet fever | 5 | Whooping-cough | 1 |
| Rubella | 3 | Chicken-pox | 3 |
| Measles | 2 | Diphtheria | 2 |

His conclusions are rather conservative. During the last twelve months, he placed in the cubicles doubtful cases of scarlet fever and diphtheria and is averse to placing other infectious diseases in them.

To the box-rooms, 660 patients were admitted, suffering from the various infectious diseases except chicken-pox. The following cross-infections developed:

| | Cases |
|---|---|
| Scarlet fever | 6 |
| Rubella | 3 |
| Measles | 2 |
| Whooping-cough | 1 |
| Chicken-pox | 3 |

In his 1910 report, Dr. Goodall, medical superintendent of the Eastern Hospital, London, describes the conversion of a long ward, 106 by 28 feet, into twenty cubicles with glazed partitions. Ten rooms open from both sides on a common corridor. These cubicles were opened for patients Sept. 6, 1910. Up to March 25, 1911, 142 patients passed through this ward. Of these, 110 suffered from an infectious disease, while thirty-two did not. The following diseases were included:

| | Cases | | Cases |
|---|---|---|---|
| Scarlet fever | 16 | and measles and chicken-pox | 1 |
| and diphtheria | 2 | and measles and rubella | 1 |
| and measles | 5 | Measles | 25 |
| and chicken-pox | 9 | and chicken-pox | 1 |
| and rubella | 2 | and rubella | 1 |
| and whooping-cough | 1 | Chicken-pox | 3 |
| and diphtheria and measles | 1 | Rubella | 13 |
| and chicken-pox and scabies | 1 | Mumps | 1 |
| Diphtheria | 5 | Erysipelas | 1 |
| and measles | 5 | Influenza | 1 |
| and chicken-pox | 3 | Enteric fever | 1 |
| and rubella | 1 | Lobar pneumonia | 4 |
| and whooping-cough | 2 | Scabies | 1 |
| and mumps | 2 | Diseases non-infectious | 32 |
| | | Total | 142 |

Patients were not selected as to the stage of the disease or as to position in the ward. One child contracted chicken-pox during the six months' period.

Dr. C. Rundle of the City Hospital, Liverpool, reports that during 1910 and 1911, 668 cases were treated by the barrier system. These cases included all contagious diseases, not excepting measles and chicken-pox. During these two years, only two patients developed a secondary disease, both contracting scarlet fever. Other hospitals in England which are employing aseptic nursing are situated at Manchester and Walthamstow.

The earliest and parent hospital, the Pasteur in Paris, is perhaps one of the most successful. Small-pox is admitted to this hospital, which is done in no other hospital so far as I am aware. I know of only one small-pox cross-infection. Two other Paris hospitals, the Herold and the Hôpital des Enfants Malades, employ aseptic methods, but I do not know their results.

I shall now offer for consideration an experience in the Providence City Hospital of three years, from March 1, 1910, to March 1, 1913, with aseptic nursing of infectious diseases. The special construction of this hospital and introduction of aseptic nursing in this country is the work of Dr. Charles V. Chapin, superintendent of health of the city of Providence.

Patients are accommodated in three two-story buildings' situated parallel, one each for diphtheria and scarlet fever, and one an isolation building, so-called, for all other infectious and mixed cases. Each floor of the diphtheria and scarlet fever buildings is divided into a ward of twelve beds and seven or eight rooms arranged on either side of a central corridor. The side rooms vary in size, containing from one to three beds. The ground floor has also an admitting room, connecting with a doctors' gown and wash room, and a patients' bath. The large number of small rooms furnishes the opportunity for isolating mixed or doubtful cases and for detaining new cases a certain period of time before they are allowed with convalescents. Each serving kitchen is provided with a utensil sterilizer for sterilizing dishes, etc.

Each of the rooms, except the large ward, is provided with a lavatory with forearm levers and without plugs, hooks for gowns, a bar on which to hang individual towels and a small shelf for the patient's thermometer, etc. The usual nursing utensils are kept on a bedside table. All the paint has an enamel finish so that it can be easily washed.

On the first floor of the isolation building are twelve single rooms arranged on either side of a central corridor. Ten of them are arranged directly opposite so that the doors open opposite to each other. Beside each door and opening into the same room, is a full-sized window which permits of better observation of patients by the nurses and keeps the patients better contented by permitting them to see their neighbors across the hall. The partitions rise to the ceiling and are of studding, lathing and plaster. Each room is furnished the same as those just described. This floor also has its serving kitchen, toilet, bath and operating-room. In the serving kitchen is a large utensil sterilizer for sterilizing dishes, medicine glasses, etc., which come from the patients.

The construction of the second floor of the isolation building is similar except that the rooms contain from one to three beds, making it possible to accommodate in the same room several patients isolated for the same purpose. The doors to all the rooms in the building are always left open unless there is some unusual reason for closing them.

The dormitory for nurses is in the administration building; that for female help is in the service building and for male help over the power house and laundry.

The administration of the hospital has been worked out along the line of avoiding contact infection. It has been our aim to avoid cross-infection and infection of employees by strict asepsis. Every new nurse and employee who has to go into the wards is thoroughly impressed with the idea that if he gets sick it is most likely his own fault and probably due to putting his fingers or something else contaminated in the ward into his mouth; employees understand that if any cross-infection develops they are liable to investigation as to the care they exercise in their work. Every employee has a culture taken on beginning work and before going into the wards. Everyone must be vaccinated before or soon after entering on his work. No prophylactic antitoxin is administered either to employees or to patients.

I shall not attempt to present all the details of our technic, but shall outline the more important; first, those relating to the general administration, and second, the more direct care of the patient.

The resident physicians have their quarters in the administration building and all eat in the same dining-room. While working in the wards, white duck suits are worn, and in each ward a gown is put on if it is necessary to make examinations and thus come in contact with the bedding and patients. On leaving the ward, the gown is removed in the gown- and wash-room and the hands are carefully washed with soap, water and brush in the special basin to which I have already referred. Great care is exercised when not wearing a gown to avoid allowing any part of the clothing to touch the bed, bedding or anything else. Physicians wear the usual hospital uniform and in addition a short-sleeved jacket to avoid sleeve infection.

The nurses all sleep in the same home and eat in the same dining-room. When off duty, they are allowed to leave the hospital as freely as from any general hospital. When the nurse goes on duty, she goes to the dressing-room for that ward where she has two metal lockers, one for clean clothes and one for infected clothing. She puts on her ward clothes and goes to the ward. She changes her dress, cap, apron and bib only. When going off duty, she removes her infected clothing first, washes hands and face, and then puts on her uninfected uniform. The sleeves of the uniforms are either short or rolled up.

The maids and other help put on gowns when entering the wards. These gowns have short sleeves so that the sleeves will not be contaminated. Otherwise employees observe the same care as do the nurses. The ward help eat in the same dining-room and sleep in the same quarters with all the other help, and they, too, are free to come and go when off duty. It is insisted that every case of illness among nurses and help be reported at once in order that no mild infection may be overlooked.

The same kitchen furnishes food to patients and employees. Food supplies are sent to ward kitchens in paper bags and paper trays, and these are destroyed. Such dishes as must pass between kitchens are boiled before leaving the ward and washed again in the main kitchen.

All hospital linen is washed in one laundry, the washing being done in ordinary washers.

The greatest source of infection is certainly the patient himself. If we are to minimize diseases arising in the hospital, we must have very careful regulations and insist on their obedience. Our method of procedure has been based on the contact infection idea and we have disregarded air transmission unless one chooses to insist that the coughing of a patient directly into one's face is air-borne infection.

I will trace briefly the method of care from the time the ambulance goes to the house until the patient is ready to walk out of the hospital. The various infectious diseases, including tuberculosis, are brought to the hospital in the same ambulance or in a coupé. There is nothing peculiar about the construction of these vehicles, except that the interior can be freely washed with soap and water without damage. The attendant and the driver wear clean, washable coats on every ambulance trip. Careful inquiry is made as to the presence of other recent previous infection of the patient or of any one in the house. The patient is wrapped in blankets and brought to the hospital, where he is placed in the appropriate admitting-room. The driver and the attendant return to the stable, remove their coats and wash their hands. The infected blankets and coats are put in a hamper and later sent to the laundry. The interior of the coupé or ambulance which has come in contact with the patient is washed with soap and water.

The patient remains in the admitting-room until the admitting officer has made a physical examination. A culture nose and throat and vaginal smear are taken before admitting to the ward. Even though it may be an uncomplicated case belonging in that ward, every new patient is held in detention from five to seven days, and often longer. "Detention" means that the patient is placed in one of the rooms off the ward used for the purpose where aseptic precautions are observed. Should there be any doubt at all about the diagnosis, or exposure to or suffering from mixed infections, the patient is sent to the isolation building, or else is barriered by placing a red card on the bed.

Briefly, our technic in the care of detention and barriered case is as follows: The patients may occupy single rooms off the ward or be in detention separately or collectively in larger rooms. They are kept in bed and are not allowed toys or anything else which can be thrown from bed to bed. The hands of doctors and nurses are washed after treating the patient. Each patient is supplied with a thermometer, basin, pus-basin, bed-basin, bed-pan, etc., which are kept on a table beside the bed. There is a gown to be used when coming in direct contact with the patient. All dishes are boiled after using. Our object is to control in-going and out-going infection to or from new cases.

The construction of the isolation wards has been referred to. The furniture is small in amount, and, like all the ward furniture, easily cleaned. The isolation wards have proved the most valuable section of the hospital. In them we have not hesitated to treat any of the so-called contagious diseases, except small-pox, in any stage, as well as cases for observation only. We are obliged to treat cases of measles, chicken-pox, whooping-cough, rubella, mumps, etc., and it has been very convenient and, we believe, safe to use these single rooms, equipped as they are. It saves opening a large ward and furnishing a separate supply of nurses and maids for each.

We confine the infection to the rooms immediately occupied by patients. We believe that the corridors, serving kitchen, linen-room, bath and toilet are as safe and free from infection as those of any general hospital. The same nurses care for the patients on a single floor. The nurse washes her hands with bar soap in running water, using a brush, and dries them on an individual towel every time she touches the patient or anything in the room. After handling measles and chicken-pox, in addition to the washing, a one-minute immersion in an antiseptic solution is required. If the nurse comes in close contact with the patient she puts on a gown. Each patient is supplied with everything as described above. All dishes and nursing utensils coming from these patients are put directly into a sterilizer, if steam can be used, or 1:20 phenol (carbolic acid) solution is used for rubber and glass goods. Bed-pans and urinals are emptied into a hopper and put into a tub of 1:20 phenol solution, in which they are kept an hour or more before removal to the warming rack.

Small children who would play on the floor are kept in bed throughout their hospital residence. Larger children or adults are allowed up, but confined to their rooms, except when they are allowed outdoors, when they are also kept apart. The doors of the rooms stand open all the time, and this practice, together with the extra corridor window, allows patients to see each other and to talk back and forth, and they seem very contented.

When a patient is discharged, the linen in his room is sent to the laundry, the mattress and pillows to the steam sterilizer, and nursing utensils are sterilized. The bed, wash-basin, table, chair, floor and walls within easy reach are simply washed with soap and water. Preferably the room is aired for twenty-four hours, but if we need it we have not hesitated to put a new patient into it immediately. Rooms are never fumigated.

Every discharged patient receives a thorough soap and water bath including a shampoo. The clothing has been sterilized by steam, 10 pounds for thirty minutes, so far as possible. Those articles which steam would injure are treated with formaldehyd vapor in the same chamber, to which 1 or 2 pounds of steam has been added.

It will be noticed that we do not use any disinfectant solution for the hands, except after measles and chicken-pox. It has seemed to us that to wash the hands with soap and water and brush every time they became infected, if we could make it convenient, would be sufficient. There is no antiseptic solution which is efficient under immersion of less than one minute. An antiseptic solution is not necessary after washing, except perhaps in the case of measles and chicken-pox.

Time will not permit me to present the results of aseptic nursing after three years' experience in such detail as I should like to. I believe that the Providence City Hospital is the only hospital in this country which keeps an accurate record of all diseases contracted in the hospital by patients and help, and publishes it in annual reports. I sincerely wish that it were a general practice so that we might have facts on which to base comparisons of the results.

I shall first mention briefly the number of diseases contracted in the hospital, with incidence of infection, among help, scarlet fever patients and diphtheria patients; then take up in more detail the results of treatment in our isolation wards, which is the real test of aseptic nursing.

Among the seventeen physicians who have worked in the wards, the only disease contracted was diphtheria, three cases, 18 per cent. Among forty-seven graduate nurses, scarlet fever developed once, 2 per cent; diphtheria twice, 4 + per cent; rubella once, 2 per cent. Among 183 pupil nurses who work in the wards two months, scarlet fever occurred eleven times, 6 per cent.; diphtheria ten times, 5.4 per cent.; rubella once, 0.5 per cent. Among eleven nurse maids, no disease occurred. Among eighteen ward kitchen maids, one developed scarlet fever, 5.5 per cent., and one diphtheria, 5.5 per cent. One laundry maid developed scarlet fever and a night telephone operator diphtheria.

Diseases contracted among the 861 patients who have been admitted to the diphtheria ward are as follows:

| | | | |
|---|---|---|---|
| Scarlet fever | 2 | Rubella | 3 |
| Diphtheria | 1 | Whooping-cough | 3 |
| Chicken-pox | 18 | Total | 27 |

This constitutes an incidence of secondary infection of 3.1 per cent.

Diseases contracted among the 649 patients who have been admitted to the scarlet fever ward are as follows:

| | | | |
|---|---|---|---|
| Diphtheria | 3 | Chicken-pox | 13 |
| Measles | 4 | | |
| Rubella | 1 | Total | 21 |

This constitutes an incidence of secondary infection of 3.2 per cent.

The diseases contracted among the patients in the isolation building have been confined to measles, chicken-pox and scarlet fever. Between March 1, 1910, and March 1, 1913, the period which this paper covers, there have been treated in this ward 842 patients. Of this number, 151 were there less than a week, and 691 more than a week. These 842 patients suffered from the following diseases:

| | | | |
|---|---|---|---|
| Chicken-pox | 76 | Tonsillitis | 22 |
| Diphtheria | 137 | Tuberculosis pulmonary | 16 |
| Diphtheria carrier | 138 | Vaginitis gonorrheal | 8 |
| Erysipelas | 3 | Variola | 2 |
| Influenza | 1 | Vincent's angina | 4 |
| Measles | 242 | Whooping-cough | 128 |
| Mumps | 11 | Tinea tonsurans | 1 |
| Noma | 6 | | |
| Ophthalmia gonorrheal | 2 | | 1,066 |
| Rubella | 37 | Non-infectious diseases | 88 |
| Scarlet fever | 231 | | |
| Syphilis | 1 | Total | 1,154 |

The excess of diseases over the number of patients is accounted for by mixed cases.

The following diseases have been contracted: chicken-pox, 8 cases; measles, 25 cases; scarlet fever, 10 cases; a total of forty-three cases and an incidence of 5 per cent. Remember that the foregoing diseases were placed in the isolation rooms in any and all stages.

So far as I know no other hospital, except the Pasteur, has ever undertaken to care for such a variety of diseases by aseptic nursing. It is fair to conclude that the following diseases can safely be treated by the cubicle system: diphtheria, scarlet fever, whooping-cough, rubella, mumps, gonorrheal infections. There may be some question with relation to chicken-pox and measles. I believe that when our technic is better perfected, these also can be recommended as amenable to aseptic nursing. I believe that the cross-infections were due to faulty technic. The cross-infections have appeared mostly in outbreaks and we have had intervals as long as fifteen months in the isolation wards without a secondary disease arising.

## ABSTRACT OF DISCUSSION

DR. H. E. ROBERTSON, Minneapolis: Does Dr. Richardson place pupil-nurses in his isolation ward, or does he use trained nurses for this strict aseptic work?

DR. D. L. RICHARDSON, Providence, R. I.: For the first eighteen months of our work in this isolation ward we used pupils, but after one or two experiences we felt that it was not safe. If we had pupils for six months or a year we should deem it feasible, but we have them for only two months. It is not long enough to trust them to nurse cases of measles and chicken-pox and possibly scarlet fever. If they are in the ward for several months' preliminary training then they can be trusted. Our object is to develop an aseptic technic. The nurse is under strict supervision for a certain period of time because we must have faithful assistants. The work in fact depends entirely on the nurses. They are the ones who care for the patients, and it is necessary to enlist the cooperation of every one in the hospital to insure success. I am glad to say that in our work every one has imbibed the spirit of aseptic nursing and does not fear the diseases in any way, being careful to avoid any opportunity of contact.

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# HOLLOW FOOT—PES CAVUS *

CHARLES A. PARKER, M.D.
CHICAGO

An increase in the concavity of the longitudinal arch of the foot is of frequent occurrence. In some persons it is entirely normal and causes no symptoms whatsoever. It may, however, become so great as to constitute a real deformity, and in severer cases be quite as disabling and painful as the worst flat-foot. Like flat-foot, its development is usually insidious and may be due to several different causes. The essential feature is the increased concavity of the arch with a shortening of the structures of the sole. Dorsal retraction of the toes is usually present and bears an important relation to its development, but is not a part of the cavus itself. It is usually associated with some malposition of the foot, as varus or valgus, equinus or calcaneus. It is more frequently associated with equinus or equinovarus. So-called true or essential cavus is rare. The deformity may be fixed or reducible.

In the earlier cases the normal contour of the foot can usually be restored by simple manipulations, but in the fixed cases changes in the bones and soft parts make this quite impossible by any such simple measures. So in the treatment, milder measures are commonly sufficient in the earlier cases, while in the fixed condition operations on the bones and soft parts are frequently necessary to restore in a measure the normal condition of the foot.

Such is a brief outline of the condition with which we are all familiar. We are not, however, so familiar with the etiology and development of this affection. It was this obscurity surrounding the origin and development of several cases under our care that first suggested to me an attempt at a better understanding of the whole subject of cavus. Several lines of investigation were considered but it was early seen that a thorough knowledge of the mechanism of the deformity was an essential factor in them all. Thus my study was naturally directed to this phase of the subject which I finally determined to make the dominant part of my paper after realizing the futility of attempting to present at this time a complete survey of so large a subject. While this determination leaves much to be desired in the way of unraveling questions of obscure etiology, etc., it has to commend it the virtue of directness and concentration of effort on one essential at a time. General principles of prophylaxis and treatment will be referred to and etiology will be incidentally discussed.

## THE MECHANISM OF CAVUS

The essential deformity of cavus is limited to the region of the tarsus and metatarsus. The long rigid metatarsals, with the slightly movable cuneiforms, the scaphoid and the cuboid, form the front part of the arch, while the astragalus and os calcis form the back part. Between these two portions is the mid-tarsal joint where the greatest amount of flexion takes place. Rotation around a shifting oblique anteroposterior axis passing through the navicular, the head of the astragalus and the posterior part of the calcaneo-astragaloid articulation adds a varus or a valgus position to the foot. The concavity of the arch is normally maintained by the shape and arrangement of the bones, the ligaments, muscles and fascia of the sole and the muscles of the dorsum of the foot. The bones, ligaments and fascia are passive in their function and depend on the active muscles to maintain their proper relations and tone. The rigidity of the bones preserves the general form of the foot in paralysis of the muscles, but the ligaments and fascia only imperfectly perform their functions in this condition. The muscles are the prime factors in maintaining and increasing the arch, and disturbance of their function is responsible for the development of most of its deformities.

Thus the muscles in the sole of the foot, including the long flexors passing to the toes, tend to increase the concavity while those attached to the dorsum of the foot both in front and behind the ankle exert their influence in the opposite direction.

The strongest extensor of the arch is the Achilles tendon acting on the posterior part. Paralysis of its muscle is a common cause of cavus, the so-called paralytic type accompanying calcaneus. The mechanism is very simple here and needs no further discussion. This is the only arch extensor behind the ankle and so is the only muscle in this region whose weakness can give rise to cavus. If the other muscles of the foot are also paralyzed, of course, cavus may not develop.

The conditions in front of the ankle are more complicated. Here the tibialis anticus is the chief opponent of the gastrocnemius and soleus, and a strong extensor of the arch. It is aided by the peroneus tertius and the long and short extensors of the toes.

The extensors of the toes are weaker than the tibialis and act only indirectly on the arch. This indirect action, however, is exerted in conjunction with the flexors of the toes and is of the utmost importance in controlling the stability of the arch.

So fundamentally important is this interrelation of the flexors and extensors of the toes in preserving the normal condition of the arch that, if we leave out of account the paralytic calcaneus and possibly the congenital types, I believe it is safe to say that a perversion of the normal reciprocal action between the flexors and extensors of the toes can account for most, if not all, of the remaining types of cavus. Of course perversion is an extremely elastic term, yet this general conclusion, if true, by narrowing the field of endeavor offers a distinct advance in the approach to a solution of this obscure problem and incidentally a justification for this paper.

I shall attempt to substantiate this conclusion and make clear the character of the interaction.

A careful study of the normal interaction of these muscles will best lead to an appreciation of their action under abnormal conditions.

In the normal foot with properly balanced muscles the toes lie extended directly in front of the heads of the

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* Read in the Section on Orthopedic Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

metatarsal bones with neither dorsal nor plantar deviation. This is the position of rest in which the muscles most easily maintain their balance. The foot is usually at right angles with the leg or slightly extended. Active flexion or extension of the toes immediately affects the flexible arch, and in this manner: dorsal extension increases the concavity, and plantar flexion decreases it. This can easily be determined by trying it on a normal foot. Neither group of muscles acts directly on the bones of the arch; their action on the toes is responsible for the change. This change of the arch is explained as follows: The centers of rotation in the metatarsophalangeal articulations are near the centers of the heads of the several metatarsal bones. The tendons pass respectively dorsal and plantar to these centers to their attachments to the phalanges and maintain the arch in its normal or resting position, when the toes are straight ahead; but let the toes be actively or passively extended, the flexor tendons on the under side necessarily must be pulled upward over the rounded heads of the metatarsal bones to allow the toes to take their new dorsal position. In other words, more of the flexor tendon is distal to the head of the metatarsal than was the case at the beginning. In order for this to occur the flexor tendon must stretch an equal amount or else the span of the arch must be just so much diminished; that is, if ½ inch of a flexor tendon is drawn up in front of a metatarsal bone, it means that the muscle from which it came stretched ½ inch or that the chord of the arc which it originally spanned was shortened ½ inch. Of course the tendon itself does not stretch although the muscle may relax. Either one or both of these two things, relaxation of the muscle or shortening of the chord of the arc, must always occur to allow dorsal extension of the toes. It is probable that normally both occur. If the tendons were fixed cords, the second method, by shortening the arch, would be the only possible one. Two sets of flexor tendons are concerned in this action, the long flexors passing behind the ankle and the short flexors lying entirely in the sole. The function of the latter is not affected by movements at the ankle, while the function of the long flexors is somewhat affected by its movements. When the foot is extended they are slightly relaxed and when it is dorsally flexed their tension is somewhat increased. This relaxation of the long flexor tendons in extension of the foot tends to weaken their effect in the previously mentioned interaction. This tendency, however, is slight as they pass so near the axis of motion at the ankle that flexion or extension of the ankle makes very little difference in their ultimate action. As they are much the stronger flexors of the toes this slight loss in foot extension probably still leaves them the most effective flexors of the toes. On the other hand, the dorsal extensors of the toes pass a greater distance in front of the axis of motion at the ankle and are markedly increased in their capacity to extend the toes by strong extension of the foot and thus gain definite power over the flexors that easily maintained their balance in the normal or resting position of the foot. Much that has been presented to amplify the simple observation that dorsal extension of the toes increases the concavity of the plantar arch can be used with equal effectiveness in showing the converse to be true, that plantar flexion of the toes decreases the concavity of the arch.

While I am at present especially concerned with the production of cavus, a brief consideration of the manner in which a decrease in the concavity of the arch is produced will be of distinct value in emphasizing the force of the original statement regarding the fundamental importance of the interaction of the flexor and extensor tendons of the toes in health and disease.

In active or passive plantar flexion of the toes the dorsal tendons are drawn beyond the heads of the metatarsals. This necessitates a lengthening of the dorsal tendons or a dorsal movement to an equal degree of the distal end of the arch.

The dorsal muscles may relax and thus allow some of the lengthening, yet they must be kept fairly active to maintain the position of the foot against the extending force of the plantar flexors. This disturbs the equilibrium of the resting position and throws an increased extending force on the front of the arch that is not present during rest. It is probable that relaxation of the extensor muscles and dorsal movement of the distal end of the arch occur together under mormal conditions. If the dorsal tendons were fixed cords dorsal movement only would take place. Dorsal movement of the front of the arch can take place in just one other way and that is by extending the muscles of the calf allowing dorsal flexion at the ankle. The large size of these muscles, however, and their habitual synergic action with the flexors of the toes practically exclude this as a normal method of compensation. The short dorsal extensor would not be affected by the ankle movements.

In health the various changes in the arch are purely physiologic and the normal resting position of the foot is readily resumed, but under pathologic conditions this position either cannot actively be assumed or if assumed cannot be normally maintained.

Applying these principles in certain pathologic conditions we shall now see how well adapted they are to explain the changes that initiate cavus.

The disturbed action of the flexors and extensors is usually secondary in nature, the real affection being in the synergic muscles. Thus the originally affected muscles primarily destroy the balance of the foot and the perfectly physiologic action of the flexors and extensors under the changed conditions produce the deformity.

Usually back of the muscular affection is the nervous lesion, primary muscular dystrophy as a cause being a rare possibility and quite outside of my experience.

As a simple and instructive illustration let us take the familiar anterior tibial paralysis of acute poliomyelitis. First, there is a foot-drop due to the unopposed action of the muscles behind the ankle. With the foot-drop there is overextension of the toes and in strict accordance with the law of interaction of the flexor and extensors of the toes an increase in the concavity of the arch. At first raising up the ball of the foot completely restores the arch and corrects all deformity. Later, however, contractures of the muscles behind the ankle, changes in the muscles, fascia and bones of the foot make complete restoration in this manner impossible.

This is a very common form of cavus and is usually associated with varus or valgus. When the posterior tibial and possibly other muscles behind the internal malleolus are weakened valgus develops usually with a diminished equinus, lessened dorsal retraction of the toes and a loss of the cavus action. Cavus may not develop at all if the extensors of the toes are also paralyzed or if both flexors and extensors are paralyzed, as in extreme cases. Going from this flagrant example through the gamut of mild and insidious attacks of this and other affections on the innervation of the tibialis anticus, it is readily seen how difficult it may be in a given case to determine the etiology or the primary seat of the affection. With all muscles functionating and the reflexes apparently normal and only such atrophy as goes with the limited action of the deformed foot, it may be difficult or impossible even to tell which is the primary lesion. We are not always able to obtain a history of earlier paralysis, particularly in the milder cases or in infancy before commencing to walk. I have had several cases in which an early recognized poliomyelitis was the known factor, while in similarly appearing cases no history of a definite attack could be adduced, although it was quite probable that the primary disturbance was the same. Lesions of the nervous system lying both proximal and distal to the portions affected in anterior poliomyelitis may affect similar areas of distribution and initiate the development of cavus. The various forms of neuritis of toxic or other origin may affect the distal elements, and even a primary myositis of the tibialis itself may be responsible for its development.

More obscure are the lesions proximal to the anterior horn cells of the cord lying in any part of the motor route from the cerebral cortex to the termination of the pyramidal tracts. These are usually accompanied by evidences of spasticity, as in the frank cases of Little's disease, yet, just as the mild poliomyelitis may have passed entirely unrecognized, so may a lesion of the upper neurons remain so obscure as never to have suggested its presence. Here a careful study directed to the upper neurons involving both the mental and the motor processes may help to locate the primary seat of trouble.

One of our patients with bilateral cavus and dorsally dislocated toes also had a spina bifida occulta.

The classic symptom-complex of equinus, retracted great toe, and cavus in Friedreich's ataxia is a striking demonstration of this local mechanism. Again, taking the example of the shortened limb with all the muscles physiologically perfect, the constant use of the extended foot develops a compensatory cavus while enabling the toes to reach the ground. High-heeled shoes may thus have a decided influence toward the development of cavus although my experience does not allow me to be positive on this point.

That disturbance of the interossei muscles may lead to the development of cavus was suggested by a recent case in my office of a young woman presenting dorsally retracted toes and complaining of trouble in the anterior region of both feet. The retraction was only slight but the possibility of a later cavus if neglected was mentioned at the time. She was wearing shoes several sizes too short for her. The situation of the interossei, arising from the metatarsals only, prevents their having any direct influence in the form of the arch, but their peculiar function of flexing the first phalanx and extending the last two has a most important influence in maintaining the normal balance between the strong flexors and extensors of the toes. Situated as they are in a part of the foot most commonly abused in the various improper forms of shoes, occasional serious disturbances in their function should not surprise us. Indeed, the wonder is that they do not occur more frequently. With a weakening of these muscles the balance is disturbed and the dorsal extensors gain the advantage. The toes become retracted and the arch increased. Thus the weakness of the smaller muscles destroys the balance and the large muscles produce deformity. A somewhat similar effect on the fingers is well known in paralysis of the ulnar nerve supplying most of the intrinsic muscles of the hand. Local trauma of these muscles may be sufficient to produce these results or their innervation may be disturbed by affections of the nervous structures distributed throughout the lower and upper neurons. There are still cases of cavus in which the origin remains obscure. The mechanism is apparently the same as in those whose origin can be traced, but the etiologic factor eludes detection. These have been considered as due to developmental deficiencies of the nervous system disparaging the normal balance of the muscles and initiating deformities. Other deformities than cavus may thus arise.

Many cases of adolescent cavus appearing in children 10 to 13 or 14 years of age, the so-called true or essential cavus, have been ascribed to this indefinite origin, but it is very probable that the more carefully we search for the many causative factors with which we are already acquainted the fewer will be the number remaining in this obscure class.

### TREATMENT

The treatment naturally resolves itself into that of the general condition and that of the local condition. With most of the cases secondary to previous lesions of the nervous system it is evident that most of the treatment will be of the local condition.

The necessity for proper balancing of the foot is obvious. In the early reducible stage, this is frequently simple, by braces or other means best suited to the individual case or to the practice of the surgeon. In the later, fixed condition, nothing short of very forcible correction will in a measure relieve the deformity. Resection of a wedge from the arch with section of plantar soft parts is often necessary. Various special operations have been devised and used with more or less success in proper cases.

### CONCLUSIONS

Hollow foot, or cavus, is usually accompanied by some malposition of the foot as varus or valgus, equinus or calcaneus. So-called true or essential cavus is rare.

Cavus is practically always of neurogenic origin.

Leaving out of account the paralytic calcaneus and possibly the congenital types, it is safe to assume that a perversion of the normal reciprocal action between the flexors and extensors of the toes can account for most if not all of the remaining types of cavus.

Simple measures commonly suffice to restore the normal balance in the initial stages, while in the fixed deformity severe force, frequently accompanied by resection of bones and section of soft tissues is often necessary to restore in a measure the normal condition of the foot.

7 West Madison Street.

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## ABSTRACT OF DISCUSSION

Dr. Gilbert L. Bailey, Oak Park, Ill.: This is one of the most common types of deformity with which we have to deal and, while I agree with Dr. Parker about many cases being of nervous origin, my experience has been that the most common type is that with large calluses on the ball of the foot and backward displacement of the toes, for which no central or peripheral nerve origin can be found. More stress should therefore be laid on the disease of the interossei muscles in causing the deformity. This condition is often brought about by the compression of tight shoes or other traumas and it is more analogous to a myostitis than to a neuritis, suggesting Volkmann's paralysis. In many instances a radical bone operation is the only means of curing the condition because treating either the flexor or the extensor tendons seems to afford only temporary relief. When operation is necessary, I have had excellent results with Dr. H. M. Sherman's operation and with Dr. Philip Hoffman's operation for shortening the metatarsal bones.

**DR. JOHN L. PORTER**, Chicago: It is most interesting that many of these cases first develop signs of cavus at about the age of adolescence, and I hope that some day someone will tell us why, if the etiology of the condition is paralytic, it develops at the age of puberty more frequently than at any other time.

I should like to call attention to the operation described and published by Dr. H. M. Sherman several years ago, which, in my hands, has proved efficient; that is, the transplantation of all the extensor tendons from the phalanges into the heads of the metatarsal bones, so that when the lumbricales cease to functionate these act as elevators of the metatarsals. If the after-treatment is prolonged for six months or a year, the action of the dorsal extensors holds up the heads of the metatarsals and makes a satisfactory result.

**DR. EDWIN W. RYERSON**, Chicago: I wish to add a word regarding the usefulness of the operation published by Dr. Sherman. I do not think that he performs his original operation, which has several disadvantages; but it is most useful and, in a late communication from Dr. Forbes, I am told that a slightly different technic was evolved by him and warmly recommended. I have done this operation eighteen or nineteen times, with the best of results. The etiology is, as Dr. Porter says, obscure; but it seems likely that the condition is due, in large measure, to the wearing of improper shoes, which young people, and particularly young women, are forced to wear, because the shoemakers cannot be induced to make proper shoes. The short, narrow portion at the toes predisposes to throwing back the phalanges; and I think that this plays an etiologic rôle in more cases than I formerly believed that it did. I have been unable to find a nerve lesion in many of the cases, and it is hard to theorize as to why the interossei should be paralyzed with no paralysis anywhere else. I think that the condition is one of static rather than paralytic deformity in many cases.

**DR. NEWTON M. SHAFFER**, New York: The point raised by Dr. Porter about the cases occurring at the period of adolescence recalls what I have thought for many years; and that is the peculiar fact that this condition of the feet and lateral curvature both develop at about the same age. My study of these cases has been, I think, wrong; and I believe that you will find in almost every case some disturbance of the tendo Achillis. With the calcaneus variety of the deformity, the heel is thrown forward; in others, the tendo Achillis is shortened. In a certain class, we have hollow foot; and in other cases, we have flatfoot. It all depends on the tonicity of the plantar tissues. In the nervous variety, these tissues are resistant, and in other cases the nutrition is low and the foot gives way and flatfoot follows. In all cases, I think, the tendo Achillis is involved. It is short in many cases; and that led me to describe a condition, some years ago, called non-deforming clubfoot. The tendo Achillis plays an important part in all these conditions.

**DR. JOHN RIDLON**, Chicago: I am sorry to see that Dr. Parker's efforts and this discussion have not led to any more intelligent knowledge of the situation than we have had heretofore. Apparently it is impossible to get the idea of what a real hollow foot is into the heads of most men. Dr. Shaffer's non-deforming clubfoot, which I have known of for thirty-five years, has absolutely no relation to the condition that Dr. Parker has tried to write about. To be sure, pes cavus usually begins to develop at about the age of adolescence; to be sure, lateral curvature of the spine is usually recognized at about that time, but it has been developing for a long time. But one cannot conceive of any real relation between the two.

The shoes of women are frequently ridiculous and quite unlike the feet of any normal person; but the fact that they wear high heels has never, so far as I know, been a causative factor in pes cavus—I have never seen a pes cavus in a woman wearing high-heeled shoes. I prescribe more high heels than low heels for the women that come to me complaining of their feet. As a matter of fact, pes cavus rarely ever occurs in women. It practically always occurs in males—in adolescent boys. Dr. Porter will remember, I think, that he and I felt surprised at finding in a patient of his from Iowa the first case of pes cavus in a woman that he and I had ever seen. The view that there is a relation between the condition and high-heeled shoes, or pointed-toed shoes, is certainly a mistaken one. We do get, in the women who wear such shoes, feet with the toes bent backward, and also other deformities of the feet; but that condition is not under discussion, any more than Dr. Shaffer's non-deforming clubfoot is.

**DR. CHARLES A. PARKER**, Chicago: I knew that some interested member would be much disappointed in the results of my paper. It was founded, however, on my experience. I had seen cases of cavus of different origins, and, as I came to study out the problem, one of the first things that came to me was the mechanism of cavus. I looked over case records and found that I had never seen a case of cavus of the type of adolescence. That is why I did not write on it. I have seen these patients when they were old, but never happened to follow them through the adolescent period. I, therefore, dropped out that part of the subject from the paper, and included only the types of the condition that I could study out for myself, although I had read the papers of Dr. Shaffer and others.

The point that I believe will stand is that the essential factor in the mechanism, without going further, which I hope sometime to do, is the disturbance of the balance between the flexors and extensors of the toes, arising either in the muscle, the nerve, the spinal cord or the brain.

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# FIELDS FOR RESEARCH IN ORAL SURGERY *

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To discuss the various possible avenues of research in that branch of medicine known as stomatology would require a paper the reading of which would far exceed the time allotted to me. I have, therefore, selected a single division of this branch, and shall confine myself entirely to the discussion of some of the fields for research which are still not definitely worked out in oral surgery. To facilitate this discussion, the investigative fields are divided into five classes: embryologic, anatomic, bacteriologic, physiologic and chemical. Moreover, I shall not attempt to enumerate or to discuss all of the problems in each class, but shall mention only a few of the more important ones.

The embryologic problems for study comprehend the following: cleft-palate, harelip, fistula of the lip, fissure of the tongue, fissure of the cheek, facial asymmetry and congenital teeth, of which cleft-palate and harelip, alone or combined, are the most frequent. A great deal of work has already been done on the etiology of the latter deformities; cleft-palate has even been produced experimentally in animals.

Many theories have been advanced as to the cause. That family prevalence as an important factor was long ago established by cases reported by Mercer Adam,[1] notably of a woman whose five children all had harelip, and by Merkel[2] in his reference to Anna's observation of a man who had by his first wife eleven children, nine of whom were born dead, and two alive, with harelip and by his second wife four children, two of whom had the same deformity, and one cleft-palate. Direct heredity is noted in the case of R. G. H. Butcher[3] in which both mother and child had double complicated harelip with entire absence of the palate. Many more cases of heredity have been noted in more recent times.

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* Chairman's address before the Section on Stomatology of the American Medical Association at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Adam, Mercer, Month. Jour. Med. Sc., 1854, ix, 402.

[2] Merkel: Handbuch der pathologischen Anatomie, 1812, i, 10.

[3] Butcher, R. G. H.: Dublin Jour. Med. Sc., 1877, lxiii, 426.

P. Albrecht[4] pointed out the fact that the commonest position for cleft of the alveolar arch, accompanying harelip, corresponds to the interincisor suture, running through the premaxilla and separating the central from the lateral incisor teeth. Formerly it was the belief that the fissure in the bone corresponded to the suture between the premaxilla and the superior maxilla and that therefore the incisor teeth (after eruption had taken place) lay internal to it. Ballantyne thinks that too much significance is given to the morphology of the incisor teeth in arguments for and against Albrecht's views. He[5] says,

> After all, it is not to my mind an unthinkable theory that the cause, which arrests the development of the face and makes permanent what ought to be a transitory arrangement of parts, may also act on the dental germs in the jaw and lead one germ to atrophy and another to increase in size and perhaps divide in two. The facts of embryology must first be thoroughly investigated (teratological developments being utilized as hints to direct research), and then the general principles of teratogenesis must be applied to the scrutiny of the results: if this be done, I feel sure that the actual mode of production of harelip and all other malformations will be made plain. Of course this does not mean that the cause which leads to the arrested developments will be discovered, although we may be in an infinitely better position to make surmises regarding its nature; we shall then, I expect, find we are dealing with the germinal factor.

Continued work along this line with similar investigation concerning the other anomalies of development should yield results of great value.

Anatomically, a number of interesting fields present themselves for investigation. Certain surface areas are yet to be determined. It would be of service, for instance, to know the surface area of the hard and soft palates and of the tongue. Last year I presented a paper[6] before this Section, and I had hoped to present at this meeting a paper on the superficial area of the palate; but as my data are not sufficiently complete, I am compelled to postpone it.

The papillae of the tongue offer interesting problems for investigation. The studies of the arrangement of these papillae, especially the vallate, by Giacomini, Stahr, Hopf and Edzard, and Kunitomo[7] seem to show that fairly well-defined types exist in the white and colored races. This deserves further study.

Another anatomic problem concerns the exact location of the pharyngeal end of Rathke's pouch. That this is worthy of investigation has been shown by Frazer.[8]

Much might be gained by a comparative study of the musculature of the lips and tongue in the various races and the physiologic significance in pronunciation, while the distribution of the lymph-vessels in the walls of the mouth and in the tongue and soft palate is worthy of renewed study.

The bacteriology of the oral cavity has been pretty definitely worked out by Miller,[9] who described more than forty germs which he had isolated. He admitted that there were still others to be studied.

Such problems as the ages (of persons) at which the different micro-organisms appear, the relative virulence at different ages, the influence of the accumulation of deposits around the roots of the teeth on the production of these germs, and vice versa, are all of importance. Specific germs which cause caries and certain cases of the so-called pyorrhea alveolaris are yet to be determined.

Recently a great deal of attention has been drawn to the relation which the absorption of toxins from different forms of alveolar abscess bears to arthritic disturbances and other toxic manifestations in various organs of the body. Concentrated investigation along this line should yield results which will prove of great value in the diagnosis and treatment of many obscure and even remote conditions.

The saliva presents a number of important physiologic problems for investigative work.

Goodman[10] asserts that the sputum of tuberculous patients contains albumin. Normally the saliva and sputum do not contain this substance. The assertion made by Goodman which has been denied by other workers will bear further investigation in order to determine the significance of albumin in pulmonary tuberculosis.

Neubauer and Fischer[11] and Sanford and Rosenbloom[12] all assert that in carcinoma of the stomach there is an enzyme present which splits up glycyltryptophan. Warfield[13] and others assert that there is in the normal saliva the same enzyme which does the same thing. This is of such vast importance to the clinician that further work should be done to substantiate or to disqualify Warfield's statement.

Quite a little work has been done on the sulphocyanid which is found in the saliva. This substance is found in excess in smokers and it is a question as to whether or not it is due to some metabolic process.[14]

Fricker's[15] work opens up a new problem: Is the saliva a stimulant to the gastric juice? If so, is it due to carbon dioxid as he suggests or to the presence of a hormone? The view that the latter theory may be true fits in well with the work of Bayliss and Starling, that many of the body functions are due to the influence of the so-called hormones.

Another field for investigation concerns the formation of tartar. Is the ordinary explanation correct? Are the calcium salts, held in solution, precipitated by the action of the carbon dioxid in the saliva, or is tartar due to some other chemical action, or perhaps to bacterial action?

Of course this problem should perhaps come under the chemical or bacteriologic subdivision which I have made for the classification of research work, but it also concerns the physiology of the saliva.

So much significance is given to the urine and feces, does it not seem plausible that the time will come when the saliva, too, will undergo a routine examination as do these two excretions?

Fields for research in the oral cavity, of a purely chemical nature, are perhaps less numerous than those of the other divisions. Mention has already been made of formation of tartar. Under this head would also come a study of the combinations which are formed by the action of the different tooth-powders and pastes and mouth-washes which are used so generally by the public. The chemical combinations resulting from such mixtures may play a part in the production of certain oral lesions, particularly those of a purely dental nature.

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[4] Albrecht, P.: Centralbl. f. Chir., 1884, xi, 521. Deutsch. Ztschr. f. Chir., 1884, xxi, 201.

[5] Ballantyne: Antenatal Pathology and Hygiene, ii, p. 385.

[6] Loeb, Virgil: A Study of the Cubic Capacity and Superficial Area of the Maxillary Sinus, THE JOURNAL A. M. A., Aug. 3, 1912, p. 359.

[7] Kunitomo: Ztschr. f. Morphol. u. Anthrop., 1912, xiv, 339.

[8] Frazer: Jour. Anat. and Physiol., 1911, 45, 190.

[9] Miller, W. D.: Die Mikroorganismen der Mundhöhle, 1892.

[10] Goodman, Edward H.: The Diagnostic Importance of Albumin and Albumose in the Sputum and Their Relation to Occult Blood, Arch. Int. Med., August, 1911, p. 163.

[11] Neubauer and Fischer: Deutsch. Arch. f. klin. Med., 1909, xciii, 499.

[12] Sanford, Charles H., and Rosenbloom, Jacob: The Glycyltryptophan and Tryptophan Tests for Cancer of the Stomach, Arch. Int. Med., April, 1912, p. 445.

[13] Warfield: Bull. Johns Hopkins Hosp., 1911, xxii, 150.

[14] Mendel and Jackson: Am. Jour. Physiol., 1901, v, 274.

[15] Fricker: Therap. die Gegenw., September, 1910.

The etiology, diagnostic relations and treatment of several diseases of the oral cavity are still uncertain, and for this reason offer a promising field for research. Among the more important ones the following are worthy of study: trifacial neuralgia, stomatitis aphthosa, leukoplakia, ankylosis (certain types), pyorrhea alveolaris or interstitial gingivitis, chronic enlargement of the salivary glands, particularly the parotid, scurvy, noma and malposed teeth.

I have brought this subject to your attention for the purpose of urging on you the great necessity for encouraging work along the investigative side of oral surgery. Until those who are devoting themselves to this subject impress on their students and associates the full value of research in this connection, we are bound to become routinists and no progress can be made.

537 North Grand Avenue.

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## ABSTRACT OF DISCUSSION

Dr. F. B. Moorehead, Chicago: One thing ought to be said about research, and that is that it cannot be bought; neither can original investigators be bought. The original worker, like the poet, is born, not made. A peculiar fitness for that kind of work must be inherent in the individual. When a man has been in practice for a few years and has become fixed in his habits, he is not likely to change. Our only hope lies in the undergraduate student, who is still in the *formative* period. I believe that the hope of the future is in selecting students who have the scholarship, the vision, the inclination and the natural ability to do original work, and in starting them out before they become established in the routine of dental practice. We must also remember that the medical profession is taking as much interest in the oral cavity in its relation to the composite organism as is the dental profession, perhaps more in some instances. The dental profession should take the initiative in this work. We should point out the relation of the oral cavity to systemic disease. We ought to do as much for the oral cavity as the eye specialist has done for his work and as the ear, nose and throat specialist has done for his work. We have not done it, and the fact of the matter is that at present we are being driven into the corner by the medical man, and, like a stag at bay, we are now fighting absolutely in defense of our position.

The medical college of to-day is paying more attention to the oral cavity than it has ever done before, and more work is being done by the undergraduate medical student in this line than ever before, and that is significant. May it not be true that if we do not do our work, the medical men will take it on themselves to develop the diseases of the oral cavity as a special field of practice?

Dr. Truman W. Brophy, Chicago: When in the history of our country it became necessary to create currency for the use of the people, greenbacks were issued in enormous quantities. The currency was increased to a degree that brought the value of a dollar down to about forty cents in the estimation of the world. When the time came for returning to specie payment, the president of the United States decreed that the only way to resume specie payments was to *resume*, the advice of many statesmen to the contrary notwithstanding; so the nation resumed specie payments. So, when it comes to the question of scientific development, the only way to acquire information along scientific lines is to acquire it, and the way to acquire it is to have men do that work who are well prepared and placed in the proper environment to do it. As Dr. Moorehead said, a busy practitioner cannot devote much time to laboratory work. As a rule, he has neither the time nor disposition to do it. Men must make that work a business. I shall expect in the next decade to see such institutions as the Forsythe Laboratory established in Boston with a liberal endowment, and the Thomas W. Evans Institute, which also has a liberal endowment, gather together men prepared to engage in scientific work. Unfortunately, in our own country few men have taken up the study of that branch of pathology particularly associated with the mouth.

Dr. T. L. Gilmer, Chicago: The paper is timely. It would be impossible for us to discuss some of the things presented because there has not been sufficient development to arrive at definite conclusions.

Dr. Moorehead spoke wisely when he said that research work cannot be bought. When we look back over the history of medicine and that branch which we represent and consider the men who have made the great discoveries, we see that they have not been hired men. To do original research work, a man must be especially fitted for it, by temperament and by nature. He must have a zeal for his work that is overpowering; then he succeeds. Such men are not made; they are born.

I am doubtful as to the utilization of students for this work, since it seems impracticable to expect good research work of men who have had no practical experience. Indeed, one should have had much practical experience, otherwise he will not know the full value of that for which he looks. If young men in their college work exhibit inclination for research work they should be stimulated and encouraged in that direction.

There is one class of men specializing in dentistry at present to whom I think this paper should appeal. I refer to those who call themselves "pyorrhea specialists." I have no patience with any man calling himself a specialist who is not doing good research work in his special field. Are all pyorrhea specialists as a class well informed in histology, pathology and bacteriology of the special tissue they operate on? If they are not, they are not worthy of the name of specialists.

Dr. William C. Fisher, New York: Speaking of buying research work, the First District Dental Society of New York has secured the services of the most eminent physiologic chemist in the East, and he has for two years been working on the saliva. He has given us few facts in that time, and the reason is that he is not a stomatologist or a dentist. He is a chemist.

The dean of one of the largest dental departments of a university in the East told me over a year ago that for the past seven years he has gone to every class and watched it carefully in order to find a man of whom he can make a research worker, but he has not found him.

Dr. G. V. I. Brown, Milwaukee, Wis.: As suggested by Dr. Brophy, there are now a number of propositions leading toward the establishment of laboratories in which work of this kind can be done. They must have an endowment which will permit them to pay persons to carry on this work. As has been said, a man who is busy making a living cannot devote himself to research work, and a man's education to fit him for this work should begin early; but the trouble is that the men who have the education and who have the time are often men who have not had the foundation of a practical experience which teaches them to know the direction in which their researches can be carried on to best advantage. Those who have felt the need of this kind of work should give it definite, concerted and systematic thought, so that these various projects may be launched successfully and in a direction which will yield the greatest good in the shortest possible time.

Dr. Nelson T. Shields, New York: In research work, and especially in research work with regard to the oral cavity, which lies so near the central nervous system, if we would bend our efforts in the direction of the neuropathologist we should find that the origin of pyorrhea, etc., results directly from the degeneration of the entire system, caused by the fact that the night's rest is not sufficient to restore the loss of tissue which takes place during the day.

Dr. William H. DeFord, Des Moines, Iowa: I have been doing research work for a number of years and consequently am much interested in this matter.

Dr. Loeb's warning is timely. We should take greater interest in these matters pertaining to our everyday work, because, if we do not, the medical men will do it first, for they are fast entering this field of investigation which rightly belongs to the stomatologist and dental surgeon. Recently, Dr. Charles H. Mayo emphasized the danger of local infections resulting in constitutional disturbances, and he warned the dental profession that unless they were active in working out the etiology of pathologic conditions found in the buccal cavity the medical profession would certainly do it for us, and the credit would be theirs. I am heartily in accord with the work being done by the research committee of the National Dental Association. If the right men can be induced to devote their lives to working out these problems for us, giving us the results of their labors, it will meet with hearty approval, but I hope that this will not interfere with individual research work. We should not rely entirely on the work of professional research investigators. The outline furnished by Dr. Loeb is a most excellent one, and no doubt it will stimulate men to go into these matters more thoroughly than they have done in the past.

Dr. Virgil Loeb, St. Louis: When I chose this subject, I felt that the question of research work was so important that it could not be brought before the profession too often. When I started to write the paper, however, I found that it was indeed quite an undertaking to outline the various branches of work which are open for investigation. The discussion has brought out a number of points which I could not incorporate in the paper. One is the question of who should do this work; another is the question of how it should be done.

It has been said once or twice in the discussion that the busy men cannot do research work. I think that it is he alone who should do it. It is the man who is in contact with definite problems daily who can determine the principles which must be worked out.

# THE ETIOLOGY OF TRIFACIAL NEURALGIA OR TIC DOULOUREUX AND CLINICAL TREATMENT *

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The fundamental cause of trifacial neuralgia lies in some structural change. The really painful tic usually occurs about the period of middle life or later and is generally caused by a lesion or lesions within the teeth. All strain, whether mental or physical (and this comprises that common to all diseases and conditions), which a normal amount of sleep cannot relieve or during which the tissue consumed cannot be restored, these abnormal conditions are the foundations for an earlier degeneration of the nerve structure. No injury to the teeth from external causes, and no injury to the dental pulp from constitutional causes ever repairs itself. That is, should a tooth be broken or decayed it can never be restored by natural means, or should a pulp nodule or dentinal tumor form within the pulp from constitutional causes it will never be absorbed. A normal life should be led more on account of the teeth than any other organs of our bodies, because within the teeth branches from the maxillary nerve and from the mandibular nerve terminate within an organ, the function of which is to make tooth structure from without inward, after the manner in which teeth are formed.

The odontoblasts within the dental pulp (the pulp being the remainder of the formative organ which made the tooth) receive the irritation from any local injury and cause tooth structure to form within the pulp at the base of the fibrillae conducting the irritation. This is most dangerous at the cervix where the blood has to circulate around the secondary dentine to the pulp chamber beyond. The odontoblasts likewise cause calcifications to form within the pulp from any constitutional cause which affects the vasoconstrictor nerves, a consequent increased flow of blood through the arteries results, followed by their dilatation and the immigration of the leukocytes. Thus the arteries occupy more than their normal space in the canal, while the leukocytes fill the meshes of the connective tissue and produce compression on the vessels of exit. This irritation or hyperemia will cause pulp nodules or tumors to form throughout the entire pulp causing lesions and violent tic douloureux before strangulation occurs.

Frequently, in severe cases, the teeth, the alveolar process and gums are in perfect condition save the abrasion on the articulating surfaces which is normal after the period of middle life. We must, therefore, in these cases, look for internal causes for irritation which are to be found in the presence of dentinal tumors or pulp nodules. These patients are about 60 years old and have a poor circulation. The family physician having exhausted all means of relief, the patient is about to be operated on either by having alcohol injected or by avulsion of the sensory root. General nervous irritability or neurasthenia is a term which has come into general use to indicate certain states of the nervous system which are characterized on the one hand by a series of negative symptoms manifested by lack of vigor, efficiency, and endurance, affecting usually a large number of nerve functions, and on the other hand, by signs of active derangement, which in part seem to occur as positive symptoms and in part are due to a failure of the mutual support and control which the different parts of our nervous system afford each other in health. The tension of the blood-vessels and their degree of contractivity are phenomena which are controlled by the vasomotor system.

We can generally find lesions within the pulps of teeth, where impacted teeth become infected, diseases of the teeth, alveolar process and gums, and maxillary and frontal sinus complications which are generally caused from the affected teeth.

The knowledge is valuable that any constitutional condition affecting the vasomotor system will cause irreparable injury within the dental pulp, and that the formation of tumors or calcifications in the structural change, or lesions which will result in trifacial neuralgia or tic douloureux.

### TREATMENT

In simple cases a careful study will clearly indicate the teeth or tooth, which is the cause of the neuralgia. The pulps of the teeth involved should be extirpated by pressure using cocain anesthesia. After thorough extirpation by mechanical means, using suitable broaches, asepsis being maintained throughout, the apical portion of the root-canal should be filled with gold and the remaining portion should be filled with zinc oxychlorid. The zinc oxychlorid not only fills the remaining portion of the root-canal, but from its affinity for moisture, practically fills the dentinal tubules. This constitutes in my estimation a perfect root filling.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* This is an abstract of the original paper presented before the Section on Stomatology, which was an exhaustive one and too long for the columns of The Journal.

This case will remain free from neuralgia until a lesion is formed within another tooth, when the same method of procedure should be employed. In severe cases of tic douloureux radical measures should be employed, and every pulp should be extirpated, the teeth filled as described and the mouth should be restored to normal health and usefulness. This will permanently cure.

Children suffering from the migraine type as described by Dana will generally be found to possess impacted teeth which should either be regulated to their normal positions or extracted.

By means of roentgenography infected impacted teeth can be revealed and then extracted. In most cases tic douloureux occurs after the patient has reached the age of 45, and has a poor circulation. I strongly urge the use of agents to induce a normal secretion of bile, which will favor restoration to health.

Maxillary sinus complications are generally caused from the teeth. Occasionally the frontal sinus is connected with the maxillary sinus, as has been demonstrated by Dr. Cryer in a number of human skulls. The tooth or teeth causing the sinus involvement should be extracted and the sinus treated and cured through the tooth socket. Both sinus involvements on the same side can be cured from the socket of the tooth extracted. A sinus involvement should always be cured through a tooth socket.

This treatment in my hands has been a permanent cure for trifacial neuralgia or tic douloureux.

61 West Fifty-Sixth Street.

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# TYPHOID FEVER IN THE CANAL ZONE

## A STUDY OF ONE HUNDRED AND NINETY-FIVE CASES FROM THE CLINICAL AND BACTERIOLOGIC POINTS OF VIEW *

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AND
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ANCON, C. Z.

Climate, locality and race are known to affect various diseases to an extent that at times confuses the diagnostician who holds to the classical description of the disease in question. A study of 195 cases of typhoid fever occurring in this hospital from July, 1909, to July, 1913, was therefore thought to be of interest to the profession. Permission to write this joint paper was kindly granted by Dr. W. E. Deeks, chief of the medical clinic, and Dr. S. T. Darling, chief of the board of health laboratories.

Three papers[1] have previously been devoted to typhoid as found on the Isthmus of Panama during American occupation. These papers were presented prior to 1909, so that the following series represents another four-year period of American régime.

The cases under consideration in this paper have been collected from a section of Ancon Hospital in which the majority of the typhoid fever patients of the Canal Zone have been treated.

As to race the total series comprises 174 West Indian negroes, 9 Colombians, 6 white Americans, 3 Spaniards, and 1 Ecuadorian, 1 German and 1 Italian.

Practically all of the patients cited were young male adults employed as laborers in the canal construction. This is not due to case selection, but is the result of importation of young adults only. None of these laborers have ever had antityphoid vaccination.

During the four years covered by this paper there has been no epidemic of typhoid fever in the Canal Zone nor in the cities of Colon and Panama. A few of the cases included are the remainder of a small epidemic occurring in the early part of 1909. In this epidemic about 50 per cent. of the cases were found to be paratyphoid infections. These will be referred to later.

The fact that the great majority of our patients are tropical negroes gives us the advantage of observing the disease as it runs its course in natives of the tropics. On the other hand, we are at a disadvantage in obtaining accurate data from these patients concerning their illness prior to admission to the hospital. Our negro's idea of time and illness is very vague indeed. The onset of an insidious disease like typhoid fever is frequently difficult to obtain approximately correctly from an intelligent Caucasian. In the negro this amounts almost to an impossibility, as he habitually underestimates the time he has been ill. In the charts and tables shown the division of the disease into the customary periods of four weeks is based entirely on the negro's faulty history. We were forced to accept this method after having found all other schemes impractical.

### DIAGNOSIS

The history as given by the negro patient is generally of no practical value and must be disregarded in most instances. As previously stated, a patient admitted at the end of the first week rarely claims more than three or four days' illness. Fever, headache and loss of appetite are usual complaints, but no more so than in malaria and many other minor affections. Vomiting is an infrequent complaint, especially when compared with malarial infection.

Physically we may find a patient who *does not* seem ill and who protests against having been ordered to the hospital for a slight rise in temperature, or, on the other hand, he may have been sent to the hospital in a deep coma. Either case may be in the first or last week of the disease. As a rule the thermometer shows only slight fever in the ambulatory type, but usually high fever or hyperpyrexia in the semicomatose and comatose types. The tongue is frequently heavily coated and often distinctly tremulous. The spleen was found to be enlarged, either by palpation or percussion, in 75 per cent. of our cases. The value of splenic enlargement in a tropical community is practically nil in its diagnostic significance, unless previous and present malarial infection can be definitely excluded. With rare exceptions, rose spots are imperceptible in the negro. Profuse sweating was not uncommon in our typhoid fever cases, but differed in no way from infections like malaria and tuberculosis. Diarrhea and tympanites, with the usually associated iliac gurgling, were the *exception* and *not* the rule in our cases. Epistaxis was a very rare symptom. Early in the disease a slow pulse as compared with the height of the fever was strikingly common, and quite distinctive from severe malarial and tuberculous infections. Later in a severe infection, rapid pulse and dicrotism of course supervened. Neurologic findings, that is, stupor, delirium, meningism or coma, vary greatly. They may be entirely wanting or they may form the most conspicuous feature of the disease. Albumin and casts were found on analyzing the urine, as in most other acute infections. We have kept no records of the diazo reaction.

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* Read at the monthly session of the Medical Association of the Isthmian Canal Zone, July 19, 1913, and published with the permission of Col. W. C. Gorgas, U. S. A., Chief Sanitary Officer, and Lieut.-Col. Chas. F. Mason, U. S. A., Superintendent of Ancon Hospital.

[1] Bates, J. P.: Atypical Typhoid Fever, The Journal A. M. A., Feb. 22, 1908, p. 585. Deeks, W. E.: Typhoid and Allied Fevers in Panama, Proc. Canal Zone Med. Assn., 1909. Brown, T. R.: A Brief Review of Some of the Work in Ancon Hospital on Typhoid and Allied Fevers, ibid., 1909.

The temperature course of our typhoid fever cases was as variable as the disease itself. The classical four-weeks fever curve was the usual type. Of the remainder, the majority ran a lower and more abbreviated curve. The protracted cases have usually been severe infections and have continued as long as seven weeks. Relapses have occurred both during the attack and after. Twenty-four, or about 12 per cent., of our cases relapsed. There was only one fatality in this number. All relapses were shorter than the primary infection. Recrudescences were few and of no importance. Typhoid fever usually confers lasting immunity against subsequent attacks, but this is not invariably the rule. A very interesting illustration of this fact occurred in our series (Charts 1 and 2).

A young Ecuadorian half-breed, S. R., was admitted Feb. 13, 1911, suffering with a typical case of typhoid fever. The Widal reaction was negative on the second day after admission. A blood-culture taken on the fifth day was sterile. The Widal was repeated on the thirteenth day after admission, when it was positive. The temperature returned to normal in the fourth week of the disease and convalescence was uneventful. The patient resumed his work, but again became ill and returned to the hospital April 1, 1911. He was seriously ill and typhoid fever was again suspected clinically. A blood culture taken on the third day was positive for *Bacillus typhosus*. The Widal was also positive on the fifth day. A severe typhoid fever course followed with alarming hemorrhage. During the third week an intercurrent relapse took place and the prognosis became grave. On the twenty-seventh day in the hospital the blood-culture was found to be positive for *B. typhosus* as before, while the formerly positive Widal reaction had become negative, suggesting a reinfection due to a repeated loss of antibody. Death occurred with hyperpyrexia on the thirty-fifth day. A necropsy performed by Dr. Herbert C. Clark, pathologist of the board of health laboratories, showed the following: Acute and chronic ulcerative enteritis of the ileum; acute ulcerative colitis of the cecum and ascending colon; multiple congested and edematous, coin-shaped cicatrices of the ileum and jejunum and the other usual findings of typhoid fever. Post-mortem cultures from the spleen were positive for *B. typhosus*.

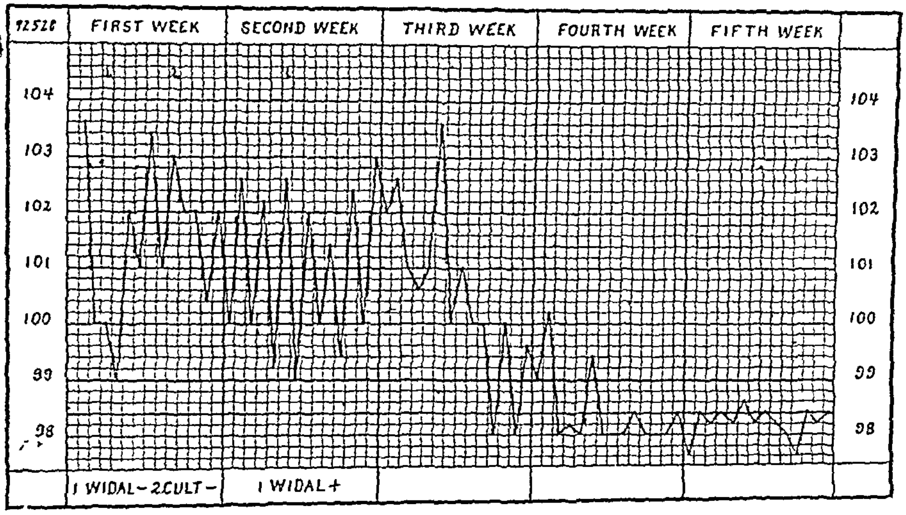

Chart 1.—Primary attack of typhoid fever resulting in recovery

The leukocyte count was performed 198 times in uncomplicated cases, giving an average of 6,750. In no uncomplicated case was there a count of over 11,000, but absence of leukocytosis did not exclude complications. This forcibly demonstrates the value of the leukocyte count in detecting the complications in the course of typhoid infection. Differential white blood-counts were not undertaken.

The exact value of the Widal test in the diagnosis of typhoid fever seems difficult to estimate. A positive reaction preceded by a negative one during the course of a fever suspiciously like typhoid is of undoubted value. To illustrate this point, the last case of our series may be cited:

The patient was admitted in what later proved to be the terminal part of the disease. His infection had evidently been a rudimentary one. Slight fever, a coated tongue and a low leukocyte count were the only physical findings. Typhoid fever in the decline was suspected and a Widal test made. The result was negative. A repeated test was also negative several days later. The fever, ending by lysis, seemed to confirm the clinical diagnosis and a third Widal was made during convalescence. This time the result was positive. A proof of the correctness of the Widal in this case was obtained four days later when a relapse occurred during which the blood-culture was positive for *B. typhosus*.

On the other hand, it is a well-known fact that the Widal test in even a single case may vary from day to day, being positive one day and negative the next. It is therefore not surprising to us that 103 tests on ninety-eight cases in the second and third week, though positive in 89 per cent. of the total cases, are difficult to analyze.

The absence of history of previous infections and the constantly increasing number of antityphoid vaccinations invalidate this test in another group of cases. Another source of error is the unfortunate fact that in unselected cases not suffering with either typhoid fever or tuberculosis, over 15 per cent. gave a positive test. Whether or not this percentage of our negroes have had typhoid fever in their native islands we have no means of ascertaining. Finally, the Widal test may be positive in tuberculous patients, for it is a fact that not a small percentage of our disseminating and miliary tuberculosis patients give a positive test. To confirm this clinical experience, the Widal test was performed on thirty-two patients with positive tuberculosis in the advanced stage. Of these thirty-two tests, seven were positive, four gave partial agglutination, and twenty-one gave negative results.

The following technic was employed in all tests: One drop of the patient's serum was diluted twenty-five times with normal saline solution. One loopful of this diluted serum was thoroughly mixed with one loopful of a saline emulsion of a twenty-four-hour agar slant growth of *B. typhosus*, this giving a 1:50 dilution of the serum. This mixture was prepared in the form of hanging drop and observed at half-hour intervals, two hours being the maximum period allowed for agglutination to occur.

The blood-culture is the only absolutely positive diagnosis of the disease. It was found to be positive in 80 per cent. of our cases cultured during the first week, 53 per cent. in the second week, and 34 per cent. in the third week; too few were cultured in the fourth week to warrant conclusions. Out of a total of 126 positive cases, *B. typhosus* was recovered 106 times; *B. paratyphosus* A 10 times; and *B. paratyphosus* B 10 times. Seven each of the two latter were recovered in 1909, a year which showed 50 per cent. paratyphoid infection during a small epidemic. Generally speaking, the earlier the culture is taken the higher the percentage of positive results. (Table 1 and Chart 3).

TABLE 1.—BLOOD-CULTURES

| Day of Disease | Number Cultured | Positive | Negative |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 2 | 2 | 0 |
| 4 | 4 | 3 | 1 |
| 5 | 5 | 3 | 2 |
| 6 | 12 | 10 | 2 |
| 7 | 21 | 17 | 4 |
| 8 | 16 | 12 | 4 |
| 9 | 30 | 17 | 13 |
| 10 | 18 | 9 | 9 |
| 11 | 22 | 9 | 13 |
| 12 | 19 | 11 | 8 |
| 13 | 12 | 7 | 5 |
| 14 | 9 | 2 | 7 |
| 15 | 4 | 2 | 2 |
| 16 | 9 | 3 | 6 |
| 17 | 3 | 1 | 2 |
| 18 | 5 | 1 | 4 |
| 19 | 4 | 2 | 2 |
| 20 | 2 | 1 | 1 |
| 21 | 2 | 0 | 2 |

The blood-culture has been positive in all our fatal cases with one exception. In this case *B. paratyphosus* A, and not *B. typhosus,* was recovered from the spleen at necropsy, though the ante-mortem culture remained sterile. It occasionally happens that the first blood-culture remains sterile, while a subsequent one proves positive when culturing the usual amount of from 5 to 10 c.c. of venous blood. The culture was positive in twelve out of thirteen cases examined during relapse. Three of these positive results were *paratyphosus* B, and two *paratyphosus* A, the remainder being *B. typhosus.*

The technic employed in recovering and identifying *B. typhosus* from the blood-stream was as follows: About 12 c.c. of blood were taken under aseptic precautions from a vein at the bend of the elbow, 5 c.c. being placed immediately in 50 c.c. of bile glycerin peptone medium, 5 c.c. in broth containing 0.6 per cent. ammonium oxalate to prevent clotting, 2 c.c. in 50 c.c. of litmus milk and several drops on agar slants. The latter two mediums were not used for recovering the typhoid bacillus, but for those organisms which will not grow in the bile or beef medium. Bile is undoubtedly the best medium for the recovery of the typhoid bacillus. These mediums were incubated at 37 C. from eighteen to twenty-four hours, at which time six agar plates were poured, three of the plates being inoculated with various dilutions from the bile medium and three from the broth. If at the end of twenty-four hours' incubation typical dew-like colonies were present on these plates, the organism was considered to be *B. typhosus,* but the work of identification was continued. (Colonies direct from the plates were occasionally tested with immune serum.) Several tubes of broth were inoculated each from a different colony and these incubated over night to obtain an abundant growth of the organisms. Each tube was then used to inoculate an agar slant, litmus milk, broth, potato, Dunham's mediums and the following semisolid mediums: dextrose, lactose, dulcite, saccharose, galactose, mannite and dextrin. A gelatin stab was also inoculated if the organism was not typical in every respect. A reading of these mediums was made every day for ten days, at which time the peptone mediums were tested for indol, agglutination tests were performed with immune rabbit serum and the agar slant sealed and filed away for further reference if necessary.

The typhoid organisms recovered from the cases cited in this paper have shown identical cultural characteristics in all but a few instances, namely: No gas formation in any mediums, acid formation in glucose, galactose and mannite semisolid, also in maltose when used; all this taking place in from twenty-four to forty-eight hours. There was turbidity and sediment in beef tea, a slight lilac tinge to the litmus milk, no indol in the peptone medium, an invisible growth or faint white streak on potato and the usual growth on agar slant. The bacillus has been easily agglutinated by immune rabbit serum and in dilution of 1:200.

The paratyphoid bacilli, as a rule, have fermented glucose, dulcite, galactose, mannite and dextrin with the formation of both acid and gas. The formation of gas in the galactose and mannite semisolid mediums has not been constant; it sometimes occurring in one, sometimes in the other, sometimes in both and sometimes in neither. Also, fermentation with a slight production of gas, a bubble or two, has been observed in lactose semisolid. Very rarely has this occurred in saccharose medium. Several colonies from the same plate may show all these differences. Cultures showing these variations were also taken and identified during the epidemic in the spring of 1909 by Dr. S. T. Darling.

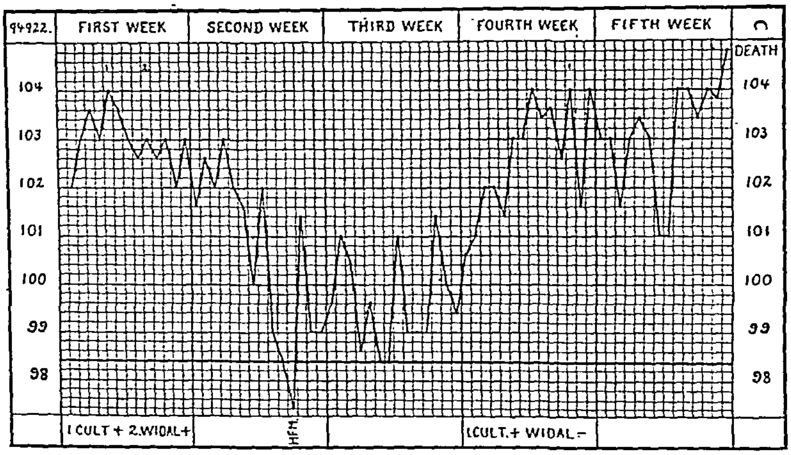

Chart 2.—Second attack of typhoid fever in same patient, several weeks later, followed by relapse and death.

In the A type the milk remained slightly acid, while in the B type it became strongly alkaline in most instances about the fifth or sixth day. The identification of each organism was completed by testing it with the respective immune serums in high dilution.

In all probability in none of the straight typhoid cases has there been a simultaneous infection with paratyphoid organisms, as glucose semisolid medium has been inoculated directly from the bile medium in a large number of cases, and in none has gas production been observed.

Early in 1909 Lieut.-Col. Charles F. Mason, superintendent of the hospital, issued orders to have stool and urine specimens cultured for *B. typhosus* during convalescence. In the submitted series 399 stools and 401 urine specimens were cultured. Tables 2 and 3 show the results obtained.

TABLE 2.—TOTAL OF THREE HUNDRED AND NINETY-NINE STOOL CULTURES

| | |
|---|---|
| *B. typhosus* present in | 16 |
| *B. paratyphosus* A present in | 1 |
| *B. paratyphosus* B present in | 0 |

TABLE 3.—TOTAL OF FOUR HUNDRED AND ONE URINE CULTURES

| | |
|---|---|
| *B. typhosus* present in | 13 |
| *B. paratyphosus* A present in | 3 |
| *B. paratyphosus* B present in | 0 |

In twenty-eight cases, or 14 per cent., *B. typhosus* or *paratyphosus* were recovered from the stool or urine or both. In these twenty-eight it occurred but once in twenty-five cases, twice in two and repeatedly in one.

### DIFFERENTIAL DIAGNOSIS

There are several infections which in many ways so closely simulate typhoid fever that a differential diagnosis is at times difficult. Of these, three deserve special attention, namely, malaria, disseminated or miliary tuberculosis and a class of cases which we have always been forced to designate "acute infections of undetermined origin."

Malaria, severe enough to be mistaken for the average typhoid fever in the fastigium, can almost invariably be diagnosed by the examination of a Romanowsky stained blood-film (Hasting's stain has been the stain of election in the Canal Zone), provided that quinin has not been previously administered. Even in cases in which the urgency of symptoms seem to indicate immediate quinin administration, there is no excuse for neglecting to make a blood-film first, for future examination. Should this simple precaution not have been observed, it may become necessary to apply the therapeutic test of from four to six days' heavy quinin administration in the face of negative blood examinations. The dosage of quinin necessary to combat a pernicious malarial infection cannot but be detrimental to a patient who is actually suffering with typhoid fever and not malaria. The practice of early blood examination would in practically all cases differentiate severe untreated malaria from typhoid fever.

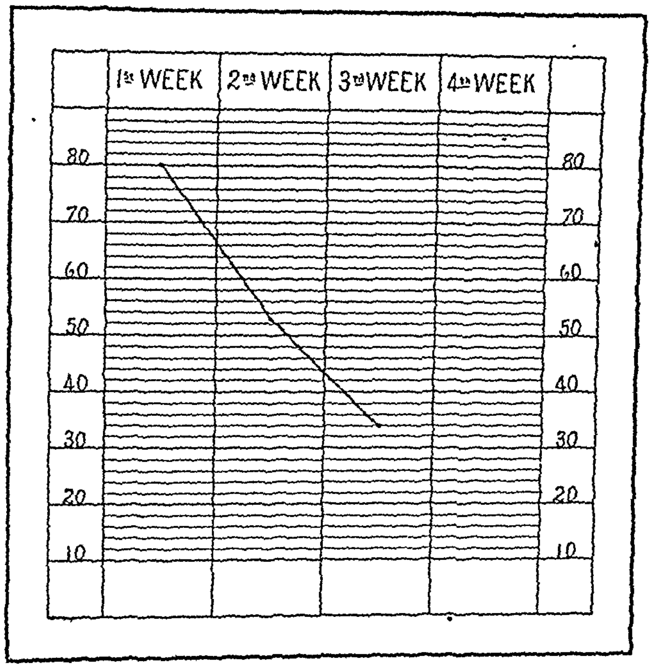

Chart 3.—Percentage line illustrating the rapid decline of positive blood-cultures during the first three weeks of typhoid fever.

Disseminated or miliary tuberculosis, in which focal physical signs are wanting, has been our greatest source of error in differential diagnosis. In not a few cases the tuberculous patient had to be treated as a typhoid-fever patient until the duration of the fever excluded typhoid. The Widal test is deceptive, and was positive in 22 per cent. of these cases as previously mentioned. A reliable clinical or laboratory finding early in the disease is much needed in these cases. Physically one of our best differential signs, when present early, has been pleural or pericardial friction. This is as common in tuberculosis as it is rare in uncomplicated typhoid fever. Early in the disease, a rapid pulse and lingual cyanosis are in favor of tuberculosis. The value of other signs in differential diagnosis so often given seems to have been over estimated so far as our negro patients are concerned. Later signs in an undifferentiated infection, as for instance intestinal hemorrhage and perforation peritonitis, are, of course, strongly in favor of typhoid fever.

"Acute infections of undetermined origin" are occasionally encountered. They commonly prove rapidly fatal. There is usually leukopenia, as in typhoid. Antemortem blood-cultures are sterile. Clinically they cannot be differentiated from grave *B. typhosus* infections. The pathologic findings exclude typhoid, show evidence of an acute infection, but shed no light on the etiology of the disease. All post-mortem cultures remain sterile.

### TREATMENT

The treatment employed in our typhoid-fever cases has been very simple and of the expectant type. The patient is usually fed exclusively on milk and broth during the fever stage. In occasional cases the patients have had oatmeal jelly, custards and orange juice added. The existing rule barring foodstuffs brought by visiting friends and relatives cannot always be strictly enforced. Hydrotherapathically, sponge baths of tap water (of about 75 F.) are given every four hours while the temperature remains over 102.5 F. Diarrhea being seldom present called for no special treatment. For constipation soap-suds enemas containing 30 minims to 1 dram of spirits of turpentine are used. During convalescence these enemas are replaced by oleum ricini in 1-ounce doses. Throughout the entire course of the disease and during convalescence phenyl salicylate (salol) in 10-grain doses is given three times daily. If stimulants are called for, strychnin and spiritus frumenti are usually preferred. During convalescence the patients are gradually returned to full diet on about the tenth day of normal temperature. All recognized antiseptic measures are of course carried out and the patient is not discharged from quarantine until two consecutive stool and urine specimens at an interval of five days are negative for *B. typhosus*. These specimens are not examined until temperature has remained normal.

### COMPLICATIONS AND THEIR TREATMENT

The following have been the complications of typhoid fever per se, in order of their frequency: phlebitis and thrombosis, 11; intestinal hemorrhage, 5; parotitis, 4; perforation peritonitis, 3; cholecystitis and periostitis, each 2; myositis and laryngitis, each 1.

The treatment of phlebitis and thrombosis was elevation of the affected limb and local application of ice. Intestinal hemorrhage was treated with morphin and ice-packs. Cholecystitis and parotitis were likewise treated with local applications of cold. One of the three cases of perforation peritonitis was recognized early enough for laparotomy and repair. All three cases proved fatal. The remaining patients who had complications, recovered spontaneously.

Complicating diseases present in their order of frequency were: estivo-autumnal malaria, 21; tertian malaria, 6; lobar pneumonia, 5; entamebic dysentery, 2; acute follicular tonsillitis, plastic pleurisy, rubeola, myringitis, gonorrheal arthritis, decubitus and sciatica, each 1. These cases were all treated in the recognized manner, irrespective of the typhoid infection. The two entamebic dysentery cases were treated by the bismuth method without any deleterious effect on the typhoid course.

### MORTALITY

In the series of 195 cases there were seventeen deaths, a mortality of 8.7 per cent. The necropsies were performed by Dr. H. C. Clark. Complications found at necropsy in addition to the usual typhoid lesions were perforation peritonitis three times, lobar pneumonia and venous thrombosis each once.

### CONCLUSIONS

Typhoid fever in the Canal Zone tropical native pursues the same variable course as in the temperate zones.

The only absolute diagnosis of typhoid fever is a positive blood-culture. The earlier in the disease that the blood is cultured, the greater the chance of making a positive diagnosis.

The Widal test has been positive in 89 per cent. during the second and third weeks. At the same time the test has also been positive in 22 per cent. of our advanced tuberculosis cases and in 15 per cent. in non-tuberculous cases of various diseases. The value of the test seems to depend entirely on its repeated application in selected cases.

The white blood-count is of great value in the diagnosis of typhoid fever. During the fever a change from leukopenia or normal to leukocytosis invariably points to complication.

Splenic enlargement in the tropics is of practically no value in the diagnosis of typhoid fever, unless previous or coexisting malarial infection can be definitely excluded.

In the differential diagnosis of typhoid fever, disseminated or acute miliary tuberculosis and "acute infections of undetermined origin" present the greatest difficulty and should always be kept in mind in the presence of leukopenia and repeatedly negative blood-cultures.

The most frequent complication of typhoid fever in the Canal Zone is malaria.

To prevent the discharge of typhoid-carriers, routine stool and urine examinations of convalescents are necessary.

## AN IMPROVED CLINICAL AND A MICROCHEMICAL TEST FOR BLOOD [*]

WILLIAM A. GROAT, B.S., M.D.
SYRACUSE, N. Y.

Small particles which look like blood or blood-tinged mucus are sometimes found in microscopic examinations of feces and similar substances, and in medicolegal examinations microscopically identified particles and dust like scrapings of minute volume require microchemical methods for fuller proof of hemic origin.

The microchemical method to be described depends on an improved benzidin test for occult blood in feces and material of this kind, and this test will therefore be described first.

Five c.c. of chemically pure glacial acetic acid is placed in each of two new or very clean 10 or 15 c.c. test-tubes and to each is added with a glass or horn spatula a knife-pointful of benzidin and an equal amount of barium dioxid. These should partly dissolve with mild effervescence, leaving a brown-straw or slightly greenish-straw supernatant fluid. If a green color develops the acid is likely contaminated with iron or the utensils are not clean, and the test should not proceed. To one of the tubes is added not to exceed 1 c.c. of the solution or extract, or a decoction of the solid material to be tested, previously boiled if ferments could be present, and at once, or within a few seconds, a deep blue or green color develops. The control tube must have held its color with no change to green or blue.

This test is so extremely delicate that it must be used with caution. The barium dioxid liberates hydrogen peroxid in the presence of the glacial acetic acid, giving more available dioxid than can be obtained by adding the official solution. Furthermore, since it does not dilute the acetic acid, the reaction is greatly sharpened and it is stable and always active, while an opened vial of $H_2O_2$, U. S. P., deteriorates.

For the microchemical test the dry material is crushed on a slide beneath a cover-slip and examined microscopically and identified if possible. A few drops of the clear portion of the reagent described is then run under the cover-slip and macroscopic blue halos quickly surround the blood-particles, or can be seen with a low power and low illumination. With moist preparations the reagent can be run under, using bibulous paper on the farther side of the cover-slip. Dry preparations may be first moistened with distilled water, salt solution, etc., as required. All utensils and reagents must be clean and pure, avoiding contamination with iron or the use of iron spatulas. Emphasis must be placed on the preliminary microscopic examination and the careful watching of those particles which have been microscopically identified as the reagent reaches them. For example, a speck of dried blood can be differentiated from a speck of iron oxid with the low power, but each will have a halo with the reagent.

600 East Genesee Street.

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[*] From the Department of Chemical and Microscopical Diagnosis, College of Medicine, Syracuse University.

## A UNIQUE CASE OF VICARIOUS MENSTRUATION

D. H. GALLOWAY, M.D., ROSWELL, N. MEX.

About six years ago I was called to see a young woman who was suffering from an ulcer on each leg. Each ulcer was larger than a man's hand, not deep but excessively painful, and bled profusely. The edges were irregular in outline, not much inflamed and not raised. The legs were not swollen. For four years, despite various forms of treatment, these ulcers persisted in varying size, becoming especially large at the menstrual periods. I first tried irrigation of the ulcers with warm physiologic salt solution, several times daily, in the intervals covering them with a wet dressing of boric acid. The boric acid caused so much pain that a wet dressing of salt solution was substituted. In five or six days the ulcers were the size of a silver dollar, and ten days later one was closed, with a smooth, apparently thin skin, unlike an ordinary scar. One week afterward I found the patient suffering great pain, and the ulcers again rapidly spreading. In three days one leg was completely, the other almost, girdled. They were so painful that the patient could obtain little rest or sleep for three or four days. After several months I recommended a careful examination under an anesthetic at a hospital. About one week before the expected menstrual period, when the ulcers were most active, the examination was made.

The uterus was very small, in fact, almost infantile. The os was dilated and a cavity 1 inch deep was found. A curet passed rather vigorously over the interior produced nothing, although bleeding was rather free. I swabbed the cavity with tincture of iodin and packed the os tightly with gauze, which was removed after twenty-four hours. The menstrual flow had not previously amounted to more than a *teaspoonful*. At the time of the next period the ulcers enlarged somewhat, while the menstrual flow was largely increased. The ulcers healed in one week and so remained during the next period, although pain in the legs was complained of and the opening of the ulcers seemed imminent. They remained closed through the next month. The next menstruation was also more profuse, and the ulcers, while open, were very small.

This trouble had existed during five years, when the patient married. I predicted that pregnancy would result in a cure. She became pregnant, had slight trouble during pregnancy, gave birth to a healthy child, and since has been entirely normal.

The conclusion is unavoidable that this was a case of vicarious menstruation, though I have never read of a similar case in medical literature. In all other reported cases the vicarious flow has been through some natural orifice, the rectum, the nose, the mouth, the eyes or the nipples. I believe that this case is unique.

## AN UNUSUAL ANOMALY OF THE LEFT PULMONARY VEIN

James Patterson, M.D., Chicago

Notable anastomoses between pulmonary and systemic venous systems are so rare as to deserve mention. In this subject, dissected in the anatomic laboratory of the University of Chicago, a large vein draining the upper two-thirds of the left lung coursed upward and emptied into the vena anonyma sinistra about 1.5 cm. from its beginning at the junction of the vena jugularis interna with the vena subclavia. About 5 cm. from its mouth this vena pulmonalis aberrans gave off a branch which ran posteriorly over the median surface of the lung and emptied into the vena hemiazygos accessoria. On dissecting out the radicals of this unusual vessel it was found that all the blood returning from the upper lobe and the upper half of the lower lobe of the left lung was short-circuited. A relatively small vein from the lower part of the lung entered the left atrium in the normal way.

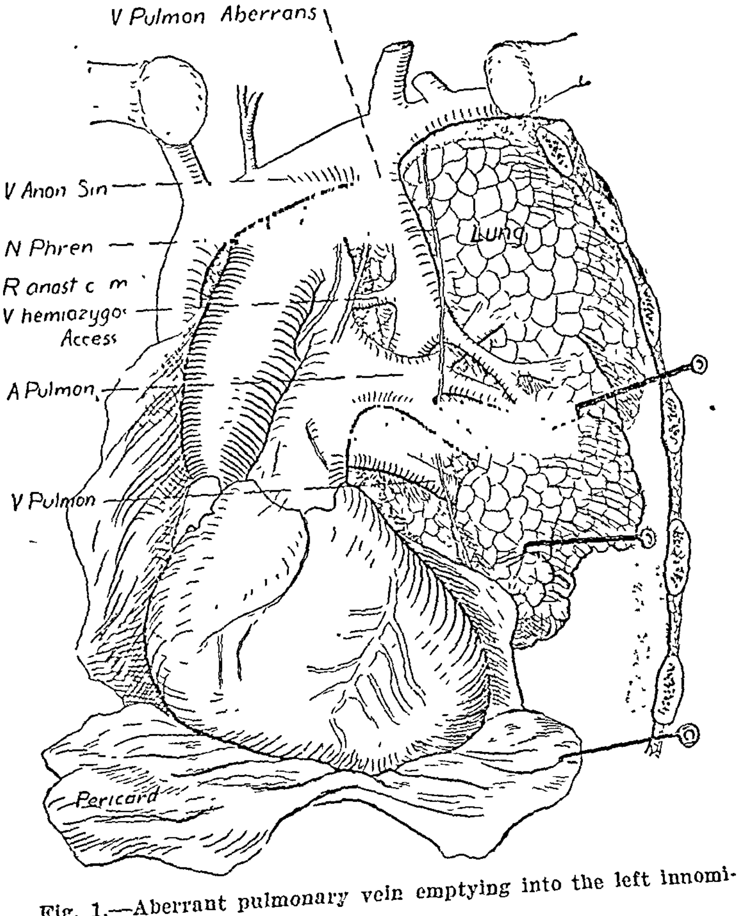

Fig. 1.—Aberrant pulmonary vein emptying into the left innominate vein.

A number of uncommon connections have been described before. Piersol[1] and Quain[2] in their texts mention that a connection similar to the one before noted has occurred and they also say that the upper pulmonary vein on the right side has been seen opening into the vena azygos major. Looten and Ruyssen[3] depict a vein from the upper third of the left lung emptying into the left innominate. They cite Meckel and Gegenbaur, and Grüber as describing two cases of the right superior pulmonary vein going into the superior vena cava; Weber as finding a connection between the left pulmonary vein and the left subclavian, and Bachmann as showing a left pulmonary vein emptying into the left innominate. The azygos has also been found an unusual tributary to the innominate. So far as I have been able to find them, there are only two cases on record of the aberrant pulmonary vein connecting with the innominate, that of Bachmann and that noted by Looten and Ruyssen, and in these cases there was not found the auxiliary anastomosis with the hemiazygos accessoria which is shown in the accompanying illustrations. The rarity of the anomaly is the reason for putting it on record.

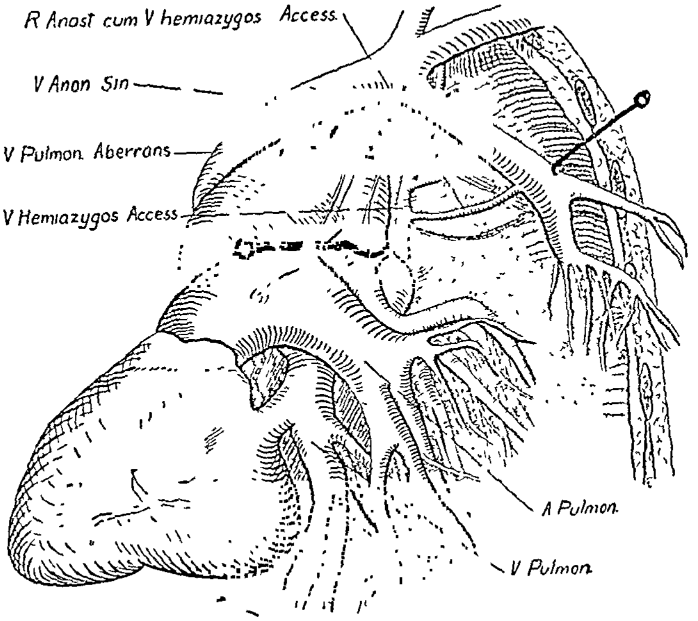

Fig. 2.—Dissection illustrating smaller branches.

I am indebted to Dr. J. H. Mitchell and Mr. A. B. Streedain for the drawings.

7 West Madison Street.

## RUPTURE OF THE SIGMOID BY AN AIR-BLAST OF 120 POUNDS PRESSURE

Harlan Shoemaker, A.B., M.D., Shelby, N. C.
Surgeon of the Shelby Hospital

On May 8, 1913, a mill-boy sneaked behind the patient and played an air-hose on the rectum as he was leaning over his "doffer's box." The injured boy dropped at once and lost consciousness immediately. The air-blast was 120 pounds pressure to the square inch. Dr. W. H. Hauser of Cherryville called me into consultation the next day. The patient was moved to the hospital twenty hours after the accident. At the consultation and on admission his abdomen was distended and tender, with some rigidity of the muscles. No blood was passed by the rectum. He vomited food and nourishment. A rapid hard pulse (120) of small volume and a temperature of 100 degrees was noted.

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1. Piersol: Human Anatomy, Vol. i, pp. 854-858, 859.
2. Quain: Anatomy, Vol. ii, Part 2, p. 379.
3. Looten, J., and Ruyssen, C.: Bibliographie Anat., 1910, xx, 219.

Through a left rectus incision under chloroform, the abdominal cavity was found full of blood with a slight odor. The upper portion of the rectum and all of a very redundant sigmoid were split along the free margin of the intestine. Above the sigmoid and in the lower portion of the descending colon two transverse tears crossed the bowel. The effects of the air-blast, by the stretching and checking of the peritoneum as well as by the congestion of the blood-vessels, could be seen as far as the cecum. The small intestines were collapsed and were not congested. The tear in the intestine was not completely through it. The serous and muscular coats were torn through, but the mucous coat was stretched to the thinness of tissue-paper and filled a 10-inch gap.

The mucosa was folded in by interrupted stitches of sea-island cotton placed in the muscular and serous layers of the bowel. A double row of stitches was used throughout. The intestine was opened well above the traumatic area of the bowel in the descending colon. A No. 24 French catheter was passed out of the rectum and fastened in the bowel by one stitch of chromic catgut. The bowel was closed by interrupted stitches of sea-island cotton and a drain was placed in the pelvis. The patient made an uneventful recovery.

In the postoperative treatment the head of the bed was slightly elevated and gas was expelled through the tube in thirty-six hours, when water by the mouth was begun and retained without distention. The pelvic drain was removed in one week and the rectal tube was expelled at the same time. The patient was nourished on liquids for fourteen days and at the end of that time the bowel movements became normal with the aid of an ounce of glycerin injected high up in the sigmoid through a small catheter. No medicine, opiates or purgatives were used by mouth or by hypodermic injection. By palpation the condition of the sigmoid could be judged at all times, and the tube in the intestine drained off the gas and some fecal matter continuously. I made no attempt to rush fecal matter over a very much sewn intestine; consequently, the stretched mucosa of the sigmoid did not slough.

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## A CASE OF AMEBIC DYSENTERY TREATED WITH EMETIN HYDROCHLORID

R. E. Cloud, M.D., Ensley, Ala.

*History.*—S. J. G., aged 34, white, male, was born in Kentucky and moved at the age of 17 to Decatur, Ala., where he lived about ten years. From Decatur he came to Birmingham (Ensley), which has been his residence continuously for the past seven years. Eight years ago he spent a month in Houston, Tex., which single trip constitutes the extent of his travels.

The present trouble began three and a half or four years ago with frequent movements of bowels (fifteen or twenty stools in twenty-four hours), straining, pain in hypogastrium and over sacrum and tenderness in epigastrium. Movements consisted mostly of blood and mucus. Attacks of this kind, more or less severe, recurred three or four times a year, usually lasting a month or more. Stools would number two or three a day during intervals between severe attacks, never being entirely free from mucus and blood and practically all accompanied by tenesmus.

At the time that the patient consulted me, September 15, he was suffering with a moderately severe attack which had developed four or five days previous and just reached the point where he had to discontinue work.

*Physical Examination.*—Height 5 feet 8½ inches, weight 140 pounds (formerly his weight averaged about 160). No evidence found of pathologic condition in thorax. Tenderness in epigastrium and hypogastrium. Stool (passed in a vessel in my office), macroscopically, seemed to consist of only blood and mucus; microscopically, motile amebas were found in the first field.

*Treatment and Results.*—September 15 the patient had six or eight movements from early morning to noon. Milk diet was prescribed and ½ grain emetin hydrochlorid given hypodermatically.

September 16. Four stools since the day before; a little blood in the first two, mucus in all. Emetin 1 grain.

September 17. Three stools in last twenty-four hours but no red blood in any. General appearance yellow with some mucus. Emetin 1 grain.

September 18. Two well-formed yellow movements, a little mucus, no blood. No emetin given; supply exhausted.

September 19. One stool about 11 a. m., yellow and perfectly normal in appearance. Patient says that this is the first morning that he has not been forced to go to the toilet, immediately on rising in probably a year. No pain or straining and only slight tenderness in epigastrium. A final dose of 1½ grains emetin was given, although the case, clinically, seemed cured.

September 24. Returned to work on Monday, September 22; all symptoms absent since the 18th and only one movement per day since that date. Feels "remarkably" well. Stool perfectly normal in appearance, well formed, no suggestion of blood or mucus.

All treatments were given in my office. There was not the least nausea or, in fact, any noticeable constitutional effect following injections although patient had to go home on the car (about a mile) after each dose.

After the second day soft diet was allowed and on the fifth patient was told to eat whatever he desired.

1903½ Avenue E.

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## A SIMPLE AND PRACTICAL METHOD FOR THE PREPARATION OF PURE BUTTERMILK

Sverre Oftedal, M.D., Climax, Minn.

The rôle of buttermilk, particularly in the artificial feeding of infants and in the treatment of gastro-intestinal disorders of the first two years of life, has made its use a matter of necessity among rich and poor alike. A practical method for its preparation seems, therefore, to be a matter of considerable importance.

This idea was suggested through a study of the recent work of Clock and others along the lines of the lactic acid bacillus principle of treatment, and its use is largely based on the administration of the culture of the *Bacillus lactis bulgaricus*, Type A (Grigoroff), although its preparation is not necessarily dependent on this form of lactic acid bacillus culture preparation.

There are two methods for the preparation of buttermilk according to this principle, the choice of which would depend on whether the physician or trained nurse is able to carry out the work in person, or must leave it to the mother or some one else in charge who has no knowledge of bacteriologic or dietetic principles:

1. In carrying out this method I have obtained the kind assistance and cooperation of the buttermaker in charge of a local creamery. It is a well-known fact that the buttermaker uses a pure culture of lactic acid bacillus in the process of "ripening" the cream. This culture is kept fresh by frequent renewal or "propagation." The mother or nurse is instructed to obtain a small amount of this culture in a bottle or hermetically sealed jar, which has previously been placed in boiling water for a few minutes and then corked or sealed. This must, of course, be kept in a cool place at the home. A pint of whole or skimmed milk, as the case may indicate, is placed in a boiler, preferably a double boiler, brought to a boiling point over a slow fire and then cooled down to room temperature without the lid of the boiler being removed. A teaspoonful of the culture (the spoon which is used having been held in boiling water for a minute or two) is then put into the milk and the whole allowed to stand at room temperature for eight hours, after which it is cooled down and kept ready for use. This method may be carried out in any household which has access to a creamery. It has been my experience that the buttermaker is very willing to cooperate with the physician in the work, and some remuneration may easily be arranged for.

2. This method requires a little *more scientific* detail, and is best carried out by the physician or trained nurse in person. Whole milk is cooled down to about 50 F. immediately after milking by the vessel being immersed in ice-water. It is then pasteurized at 180 F. for thirty minutes. After cooling down to 80 F. implantation is carried out by the use of the tablets of *B. lactis bulgaricus*, Type A (Grigoroff), in the proportion of six tablets to a half pint of milk. It is kept at this temperature for eight hours, or until the milk is coagulated. If used before coagulation has taken place it will have a bitter, disagreeable taste. After coagulation, however, it assumes a very agreeable odor and taste. The culture, after being thus prepared, may be further propagated, according to the first method, by simple transplantation every twenty-four hours, and an indefinite amount of buttermilk be thus prepared. A culture may be safely carried along for two weeks, when a fresh culture should be prepared.

# *New and Nonofficial Remedies*

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

**ACNE VACCINE.**—(See N. N. R., 1913, p. 221.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Acne-Bacterin Polyvalent.*—Marketed in four syringes containing respectively 25 million, 50 million, 100 million and 200 million killed Bacillus Acne.

**BACILLUS COLI VACCINE.**—(See N. N. R., 1913, p. 221.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Coli-Bacterin Polyvalent.*—Marketed in four syringes containing respectively 50 million, 100 million, 200 million and 400 million killed Bacillus Coli Communis.

**FRIEDLAENDER VACCINE.**—(See N. N. R., 1913, p. 222.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Friedlander Bacterin Polyvalent.*—Marketed in four syringes containing respectively 50 million, 100 million, 200 million and 400 million killed Friedlander bacilli.

**GONOCOCCUS VACCINE.**—(See N. N. R., 1913, p. 223.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Gonococcus-Bacterin Polyvalent.*—Marketed in four syringes containing respectively 50 million, 100 million, 200 million and 400 million killed Gonococci.

**PNEUMOCOCCUS VACCINE.**—(See N. N. R., 1913, p. 224.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Pneumo-Bacterin Polyvalent.*—Marketed in four syringes containing respectively 50 million, 100 million, 200 million and 400 million killed Pneumococci.

**MIXED VACCINES.**—(See N. N. R., 1913, p. 224.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Staphylo-Acne-Bacterin Polyvalent.*—Marketed in four syringes. Syringe 1 contains 250 million mixed Staphylococci and 25 million Acne Bacilli. Total 275 million killed bacteria. Syringe 2 contains 500 million mixed Staphylococci and 50 million Acne Bacilli. Total 550 million killed bacteria. Syringe 3 contains 1,000 million mixed Staphylococci, and 100 million Acne Bacilli. Total 1,100 million killed bacteria. Syringe 4 contains 2,000 million mixed Staphylococci and 200 million Acne Bacilli. Total 2,200 million killed bacteria.

**STAPHYLOCOCCUS VACCINES.**—(See N. N. R., 1913, p. 225.)

The Abbott Laboratories (The Abbott Alkaloidal Co.). Chicago.

*Staphylo-Albus-Bacterin Polyvalent.*—Marketed in four syringes, containing respectively 200 million, 400 million, 800 million and 1,000 million killed Staphylococcus Albus.

*Staphylo-Aureus-Bacterin Polyvalent.*—Marketed in four syringes containing respectively 200 million, 400 million, 800 million and 1,000 million killed Staphylococcus Aureus.

*Staphylo-Bacterins (Human) Albus-Aureus-Citreus.*—Marketed in four syringes containing respectively 200 million, 400 million, 800 million and 1,000 million killed bacteria.

**STREPTOCOCCUS VACCINE.**—(See N. N. R., 1913, p. 226.)

The Abbott Laboratories (The Abbott Alkaloidal Co.). Chicago.

*Strepto-Bacterin (Scarlatina Bacterin) Polyvalent.*—Marketed in four syringes containing respectively 50 million, 100 million, 200 million and 400 million killed streptococci from scarlet fever cases.

*Antistreptococcic Vaccine (Scarlatina Prophylactic).*—Marketed in packages of three syringes containing respectively 250 million, 500 million and 1,000 million killed streptococci from scarlet fever cases.

*Strepto-Bacterin (Human) Polyvalent.*—Marketed in four syringes containing respectively 50 million, 100 million, 200 million and 400 million killed streptococci.

**TYPHOID VACCINE.**—(See N. N. R., 1913, p. 227.)

The Abbott Laboratories (The Abbott Alkaloidal Co.), Chicago.

*Typho-Bacterin Polyvalent.*—Marketed in four syringes containing respectively 100 million, 200 million, 400 million and 800 million killed Typhoid Bacilli.

*Typhoid Prophylactic.*—Marketed in packages containing three syringes, containing respectively 500 million, 1,000 million and 1,000 million killed bacteria.

**ARHEOL.**—Arheol is santalol, $C_{15}H_{26}OH$, a sesquiterpenic alcohol, the chief constituent of sandalwood.

*Actions and Uses:* The action of arheol is the same as that of sandalwood oil. It is claimed that because of its purity it does not occasion disturbance of the stomach or the kidney. It is asserted to be useful in urethritis, cystitis and vesical catarrh, especially from gonorrhea.

*Dosage:* 0.40 to 0.60 gm. (6 to 9 grains). Arheol is marketed only in capsules containing 0.20 Gm. (3 grains) of which 9 to 12 capsules are to be taken daily.

Manufactured by Alexander Astier, Paris, France. No U. S. patent. U. S. trademark No. 72,513.

*Arheol Capsules.*—Each capsule contains Arheol 0.2 Gm. (3 grains).

Arheol is a colorless, oily liquid; specific gravity, 0.979 at 15 C. It is insoluble in water but soluble in alcohol. It boils under 11 mm. pressure at 169 degrees, and under ordinary pressure at about 500 C.

# *Therapeutics*

## PUERPERAL INFECTION

This discussion does not aim to be dogmatic, but suggestive. Though septic infection after parturition occurs much less often than even a few years ago, it is still sufficiently frequent to necessitate resort to every possible method of prevention and to the thorough consideration of effective but non-meddlesome treatment.

This infection occurs most frequently in one of two general forms. One is a typical blood-poisoning or sapremia, which is caused by the absorption of toxins or decomposition products of substances that are undergoing putrefactive or other chemical changes in the genital tract. Of course the most frequent substances causing such poisoning are retained fragments of the placenta or membranes, or, if there is any obstruction to the exit of the normal lochia, there may be absorption from this

Such poisoning may be termed an auto-intoxication or autotoxemia. This poisoning may cause more or less rise of temperature, but it may not be high, and although an increased temperature in the first few days after parturition may be due to a bowel infection, to the absorption of bowel toxins, to some disturbance of the mammary glands, to some bladder or kidney disturbance or, of course, to some acute infection to which the patient may have been exposed, still, generally, the cause of such fever will be found to be in the genito-urinary tract. Slight injuries of the uterus, vagina or perineum during parturition may allow absorption of and poisoning by discharges that would otherwise be innocuous.

The other more serious cause of puerperal infection or puerperal fever is the absorption and circulation of pathogenic bacteria. Of these may be mentioned some varieties of streptococcus, pneumococcus, staphylococcus, gonococcus, and perhaps not infrequently the colon bacillus. Localized infections and more or less general disturbance from the last three of these pathogenic germs may not be serious infections as far as the immediate consequences are concerned and perhaps could hardly be called septic fever. Infections, however, from some form of streptococcus and occasionally from the pneumococcus are always serious; the patient is septic and is suffering from dangerous septicemia. A puerperal streptococcic infection quite commonly, though not always, will show a bacteriemia and may have as a complication endocarditis, even the malignant type, with perhaps associated local lesions such as pneumonias, pleurisy and kidney infection, a pyelitis or a localized septic process in the kidney substance. Such a general infection is usually associated with more or less pelvic inflammation and pelvic tenderness, but is commonly without any pelvic abscess or purulent discharge.

It can easily be understood how a slight injury or even a denuded surface of mucous membrane in the genital tract, consequent on parturition, with its surrounding vascular supply normally increased and lymphatic supply perhaps increased owing to the needs of the previous pregnancy, gives such a dangerous possibility and almost a probability of the absorption of poisons and germs. A certain amount of abnormal absorption generally occurs, but is combatted by the normal woman. Such small absorptions are probably the cause of the frequent slight rises of temperature which last for a few hours or a day and then disappear, representing the normal neutralization of such toxins or the normal rendering inert of such germs. In other words, the resistance of the patient has proved entirely sufficient to combat the infection.

If we accept the wound or abrasion theory of most puerperal infections the poison is really external to the body and is absorbed, unless there is some previously localized infection, such as that from a gonococcus. Consequently, the prevention of infection before, during and subsequent to a parturition, proper cleanliness and care of the patient without meddlesome and obstructive treatment or methods of treatment, and without removing Nature's own protective secretions, are the objects at which to aim.

### PREVENTION OF INFECTION

Most of the preventive measures are too well understood to require more than enumeration. The selection and preparation of the room, the preparation of the patient and of himself are well-understood duties of the attending physician. The nurse also well understands the preparation of herself. A few details, however, should be emphasized. The nose of the patient should be gently sprayed and cleansed with an alkaline or mild antiseptic solution. The mouth and throat should be washed with some mild antiseptic mouth-wash, and the teeth thoroughly cleansed. The nurse should not give the patient a vaginal douche unless ordered to do so by the physician. The nurse should be free from any purulent discharge, especially from the nose, throat or even ears. She cannot be too careful in observing the greatest possible cleanliness in the care of the vulva and the vaginal discharges, with the use of such antiseptic solutions and gauze as the physician directs. If the patient must be catheterized, too great care cannot be taken to prevent infection of the bladder.

Although a physician may take every means possible for personal disinfection and wear a sterilized gown and rubber gloves, it seems, except in isolated instances, unjustifiable for him to accept a case of obstetrics while he is in attendance in a case in which there is contagion, or immediately subsequent to handling such a case, whether it be of scarlet fever, erysipelas, measles or diphtheria. After having cared for a patient with puerperal fever, he should not accept another case of obstetrics for some time and he should not attend a case of obstetrics while he is caring for any septic patient.

The patient ordinarily should not be given a vaginal douche just before parturition. Very frequently one vaginal examination by the physician, to determine the exact position of the child and the condition of the os uteri, is all that is needed. This examination should be made after sterilization of the hands and with the use of rubber gloves. When there is any delay in a normal labor, any apparent malposition, or other complicating disturbance, several vaginal examinations must be made. Of course in all operative interference manipulations are more or less necessary, and although the instruments may have been properly sterilized, injuries to the parts are very likely to occur and the danger of future infection is much greater.

If there is any purulent catarrh of the vagina, especially if gonorrhea is present, cleansing and perhaps mildly antiseptic douches should generally be used. On the other hand, with a normal vagina it seems unwise to remove the secretions which facilitate the expulsion of the child and at the same time protect the mucous membrane.

There is a difference of opinion as to the proper management when portions of membrane or of the placenta are found by examination of the expelled after-birth to have been retained. Some obstetricians would leave these retained substances to be loosened and expelled by natural processes, when ordinary gentle manipulation of the uterus does not expel them. Others believe that the sterilized, rubber-gloved hand should gently clean the vagina, and, if necessary, the uterus. The removal of retained portions of the placenta may prevent unpleasant and even dangerous hemorrhage.

The routine administration of fluidextract of ergot three or four times daily for several days after parturition in 1 c.c. (15 minim) doses, is believed by some modern obstetricians to aid and hasten involution of the uterus. If for any reason ergot is not tolerated or is inadvisable, quinin in 0.2 gm. (3 grain) doses twice a day may be of benefit in furthering this object. Just what usage of pituitary extracts is safe has not yet been clinically determined

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SATURDAY, NOVEMBER 22, 1913

## THE VENTILATION PROBLEM

It is a commonplace that "bad ventilation" and close rooms produce discomfort and more or less injurious consequences to the persons subjected to their influence. The inquiring mind at once asks two questions, related but distinct: 1. To what external factors is this effect due? 2. What are the physiologic changes in the human organism to which these factors give rise? In what does poor ventilation consist and how does poor ventilation affect the human body?

The first question has been answered variously at different stages in the progress of scientific investigation. An early and natural explanation of the ill effects observed in indoor crowding was that either the decrease of oxygen or the increase of carbon dioxid in respired air or both were responsible for the physiologic mischief. It was soon found, however, that the oxygen content of air could be reduced far below that noted in very badly ventilated rooms, and that carbon dioxid could be increased far beyond the amount ordinarily observed under the worst conditions of crowding without producing any of the usual physiologic consequences of bad ventilation. The air of a brewery may contain ten times as much carbon dioxid as that of a very poorly ventilated room, and yet men may work in such an atmosphere for years without any ill effects. Again, lack of oxygen, barring such extreme cases as the famous Black Hole of Calcutta and the ship *Londonderry* with its battened-down hatches, can hardly be a factor in ordinary conditions of ventilation, since there is less oxygen in a given quantity of the air of famous mountain health resorts than in the air of the most crowded room at lower levels. Experimentally, it has been demonstrated repeatedly that neither insufficiency of oxygen nor excess of carbon dioxid can account for the sensation of discomfort experienced in a "close" room.

It was next believed for a time that some organic poison in expired air was at the bottom of the trouble, and most of the "standards" of ventilation long in vogue were drawn up on the assumption that carbon dioxid, although not itself harmful in the proportion that obtained in rooms inhabited by human beings, was nevertheless an index of the organic impurity of the air. Early experiments seemed to give some support to the doctrine of the toxicity of expired air, but the results of these tests were shown later to rest on experimental error, and numberless recent experiments have failed to yield any basis for believing in the presence of a poisonous substance in the breath. This plainly does not mean that the chemical changes in rebreathed air are of no physiologic significance, but simply that there is thus far no evidence that they are the source of the trouble. During the last few years attention has been focused especially on the physical conditions in the air of crowded rooms. The investigations of Flügge, Leonard Hill, Hough, Benedict and Milner and others have emphasized the physiologic importance of high temperature, moisture content and air stagnation in their bearing on the ventilation problem. All these experiments agree in placing the responsibility for the observed physiologic effects on these physical factors. Certainly so far as the available evidence goes, these factors are adequate to explain all we know about the influences of good and bad ventilation. Hill has recently declared that he is "convinced that the whole of the effect of open-air treatment is due to the movement, temperature and moisture of the air, and has nothing to do with its chemical properties." It is a cardinal principle in science that when given effects are satisfactorily explained by a given set of causes it is not desirable to summon in mysterious and unknown agencies to help in explaining something already adequately accounted for. It may be true that other influences than the physical ones mentioned are concerned in the ventilation problem, but at present and until positive evidence is available it is more practical as well as more scientific to deal with the demonstrated and the tangible rather than invoke the existence of unknown and undemonstrable "possibilities."

We cannot at present do more than touch on the way in which these physical factors affect the physiologic mechanism of the human body. Whether by interfering with the heat-eliminating function of the skin as maintained by Flügge, Hill and others, or by inhibiting the process of oxygen secretion in the lungs, as recently suggested by Henderson,[1] warm, moist, stagnant air does in some way prevent the human machine from doing its work properly. The matter of adjustment to changed physical conditions is probably a complex one as shown by the phenomena of adaptation to life at high altitudes, and there are doubtless important differences in individuals that will have to be taken into account in experimental work, but already the analysis of the physiologic reactions to changes in indoor climate seems well under way.

Practically there is still much to learn about ventilation in the actual control of temperature, humidity and air movement. Little or nothing is yet known, for example, about the degree of humidity most favorable to physiologic well-being under ordinary working conditions. Extensive experiments on a sufficiently large number of persons will undoubtedly throw light on this and other obscure points. The ventilation commission appointed by the state of New York and provided with ample funds has an unrivaled opportunity to solve this and kindred problems.

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[1] Tr. Fifteenth Internat. Cong. Hyg. and Demog., 1913, ii, 62

Finally, it may be pointed out that all the discussion and investigation of the factors concerned in ventilation and of the precise nature of the physiologic response does not affect the necessity for good ventilation. Fresh, cool, moving air is just as good as it ever was for the human organism, whether we believe that its virtue is due to the fact that it contains no "toxic substance," or simply that it is fresh and cool and moving. The bad effect of close, stuffy rooms and the good effect of the open air are facts, no matter how we explain these influences or what measures may be found best for meeting the problem of practical ventilation.

## A HUMAN BEING WITHOUT CEREBRAL HEMISPHERES

The classic experiment of Goltz[1] in which he removed both cerebral hemispheres from a full-grown dog which was subsequently kept alive for some years has since been duplicated by others and has furnished the basis for important deductions regarding the functions of the portions of the brain involved. In a decerebrate dog it is evident that all those reactions in which the associative memory plays a part are permanently lacking, while the simple reactions that depend on inherited conditions only, may remain. In accordance with this the dog without cerebral hemispheres sleeps and wakes; it moves spontaneously; there is an extreme restlessness doubtless connected with the removal of cerebral inhibitions. Discrimination is shown by such animals with respect to food of varying taste. Goltz's dog could still bark and howl. It could be awakened by noise and it responded to bright light. On the other hand, it could not seek its food and recognized neither master nor companions.

The general impression which one gathers from the investigations of cerebral functions in animals is that their subcerebral centers are complete enough to be able to carry out many motor reactions independently of the higher hemispheres of the brain. It is, of course, desirable to ascertain to what extent the facts of animal experimentation find their analogy in the workings of the human brain. Accidents have furnished numerous instances of partial loss of cerebral substance; but such cases are far from comparable with those in which there is extensive or complete removal of the hemispheres. There are instances on record of human beings born without a cerebrum, but they have been anencephalous fetuses which have survived for only a few days. Even the scanty observations made in such cases have demonstrated that in the absence of a cerebrum movements of the limbs and eyelids, sucking movements and the act of crying can be carried on successfully. It has remained for Edinger and Fischer[2] to furnish the first description of a human being devoid of cerebral hemispheres who has remained alive for any considerable period. Their subject was under observation until its fourth year, when death, due to pulmonary tuberculosis, occurred. We are told that, although the symptoms exhibited by the child gave occasion to assume the existence of some severe brain involvement, prior to the necropsy, no one would have suspected the complete absence of the cerebrum. Entirely occupying the place of this portion of the brain was found a membranous bag filled with fluid, while the lower portions of the central nervous system exhibited a fairly complete and normal structure.

The very satisfactory account of this child's experiences during the three and three-quarter years of its life which Edinger and Hirsch have fortunately succeeded in obtaining impresses one with the decided inferiority of the decerebrate human subject as contrasted with comparable dogs. The child showed scarcely any change of behavior from its birth to its death. This is not true with regard to decerebrated dogs for which suitable records have been obtained. These learned to walk, to assume characteristic postures in the acts of defecation and urination, to alternate sleep and waking. The child never acquired such capabilities. It lay motionless in sleep unless wakened, and unlike the dogs, failed to learn to take food otherwise than by the primitive act of sucking. Like the dogs, it was apparently blind. It seemed impossible to discover a reaction whereby any relation which was semipsychic or conscious on the part of the child could be entered into. To quote the German observers: The child without cerebrum was less capable than a decerebrate fish or frog.

The difference in the reactions of various animals to lesions of the motor cortex is now explained by physiologists as being connected with the gradual shifting of functions from the sphere of necessary reactions to the sphere of educatable adaptations, that is, from the lower centers to the cerebral cortex.[3] This is characteristic of the evolution of the higher type of nervous system and is a concomitant of the increased adaptability which distinguishes man from all the lower animals. In the animal without hemispheres the motor mechanisms for all the movements of the body are present and can be set into action from any point on the sensory surface of the body. The first effect of adding the cerebral hemispheres to this mechanism is to increase the range of reactions, to modify or inhibit them, by diverting the stream of nervous impulses into channels which have to a large extent been laid down in the cortex by the past experience of the individual. In the dog, although a portion of the brain is in direct connection with the spinal motor centers, and can therefore initiate movements without making use of the midbrain motor machinery, these movements play only a small part in the motor life of the animal, and the removal of the corresponding centers takes away little of the conscious functions of the animal. In man the enormous power of acquisition of new movements is, as Starling emphasizes further, rendered possible by the shifting of one motor function after another to the sphere of influence of the cerebral hemispheres. Almost every act of human life has come to involve the cooperation of the cerebral cortex. The motor defects and the lack of adaptations exemplified in the child we have described would seem to show that the subcerebral centers in man are not complete and that this lack is permanent.

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[1] Goltz, F.: Der Hund ohne Grosshirn, Arch. f. d. ges. Physiol., 1892, li.

[2] Edinger, L., and Fischer, B.: Ein Mensch ohne Grosshirn, Arch. f. d. ges. Physiol., 1913, clii, 535.

[3] An up-to-date review is given by Starling, E. H.: Human Physiology, 1912, p. 498, whose point of view we have accepted.

## ANATOMY IN THE FAR EAST

An interesting account recently published by Dr. Elbert Clark,[1] professor of anatomy in the College of Medicine and Surgery of the University of the Philippines at Manila, indicates the pioneer work which has been done by our Bureau of Science in the Far East to foster the adequate study of the fundamental premedical science of anatomy. Probably few practitioners in the United States realize the difficulties inherent in the introduction of this subject among peoples hitherto entirely out of sympathy with the aims of modern science and even positively opposed to the innovations proposed by its teachers. Dr. Clark informs us that to the present time in China a religious respect for custom and tradition, the worship of ancestors and the great fear of arousing public disapproval have made the teaching of anatomy and pathology in the medical schools there all but impossible. Necropsies on natives are not permitted in China and the dissection of a Chinaman, particularly by a foreigner, would be sufficient grounds for a riot. Dissection and necropsy on the human subject are directly opposed to the ancient culture for which China has decidedly more respect than for that of the West. Therefore Clark believes that of all branches of western education modern anatomy and pathology will be the last to gain admission. We are told, however, that should the present form of government continue, the outlook for the study of anatomy may improve rapidly; for the medical missionaries and the Chinese educated abroad, many of them in medicine in America, have been most directly responsible for the "awakening of China," the recent revolution, and the growing popularity of western education.

Dr. Clark remarks that in China, where there is so much superstition concerning the human body—a superstition which many Chinese physicians seem never to overcome thoroughly for themselves—the teaching of dissection should be a most desirable and practical measure in medical education. He adds that a glimpse of what is inside the natural human being would, no doubt, tend to allay much of the native superstition and give the student more confidence in the foreigner's later instruction. In Hongkong the British colony has succeeded in making dissection and necropsies available to the Chinese students; and this new sort of education is said to produce good effects where, owing to a system of education so long in vogue, there is a great tendency to drift into learning anatomy by memory from books. In French Indo-China courses in medicine are given to the natives in the medical school at Hanoi. Inasmuch as the primary object of this institution seems to be to train high-class hospital assistants, quarantine assistants, sanitary inspectors, etc., to fill minor positions in the government service and it is rare to see a native graduate in practice for himself, there is no tendency to develop along higher scientific lines a subject like anatomy, which is of little direct practical value. There has been no policy such as obtains in our Philippines of placing higher education within the reach of the native.

Great as have been the advances in medicine in Japan there still exists, according to Clark, a prejudice against the free use of the human subject by the anatomist or the pathologist. Indeed one gains the impression from Dr. Clark's report that by contrast with what exists elsewhere in the Far East the American dependencies are to be congratulated on the excellent advantages which they offer for medical instruction and the good spirit which seems to actuate the students in the Philippines.

## THE HYPOTHESIS OF THE SELF-LIMITATION OF POLIOMYELITIS

Epidemic poliomyelitis does not attack all who are exposed to it, but appears to select its victims, leaving others quite unharmed. In some cases the attack is so mild as to be recognized with difficulty. What can be the reason of this apparent variation in susceptibility? Kling and Levaditi[1] have made some observations that are of much interest and significance with respect to this question. The serum of patients who are in the midst of an attack or who have passed through an attack destroys or neutralizes the poliomyelitis virus. This is demonstrated by injecting monkeys with suitable mixtures of virus and serum. Tests of this kind with the serum of young persons who appeared to be refractory to poliomyelitis because they remained perfectly well while living in the midst of a heavily infected district gave, in two out of nine experiments, complete protection, in five partial protection and in two none at all.

How are such results to be explained? One may suppose that the antibodies on which the resistance would seem to depend are the expression of a natural, inborn immunity or the result of what may be called a latent infection which does not develop to such an extent that recognizable symptoms are produced — in other words, the result of an acquired immunity due to a spontaneous protective vaccination or inoculation. The virus invading the upper respiratory passages multiplies sufficiently to produce a distinct antigenic effect, but no other appreciable reactions. Kling and Levaditi are inclined to favor the latter hypothesis, at least provisionally. In order to test the correctness of this hypothesis further, it would be necessary to repeat the experiments on the protective action of serum with the serum of individuals that have not been exposed to the virus.

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[1] Clark, E.: Anatomy in the Far East, Anat. Rec., 1913, vii, 237.

[1] Kling and Levaditi: Ann. de l'Inst. Pasteur, 1913, xxviii, 57.

If it should be found that the serum of such individuals is quite devoid of protective action, the hypothesis in question would be strengthened very materially. If, on the other hand, such serum were found to be protective also we would have to conclude that a natural inborn immunity to poliomyelitis does exist in certain individuals. In case the former hypothesis of a latent, clinically harmless infection should be confirmed, then the idea already advanced that the virus of poliomyelitis is much more profusely disseminated than indicated by the occurrence of actual instances of the disease would be securely fortified. If so disastrous a disease as poliomyelitis limits its spread spontaneously by the creation of an active immunity in the manner hypothesized by Kling and Levaditi, it is indeed fortunate.

### THE FRIEDMANN "CURE"—FURTHER DISGRACEFUL PRESS WORK

Milwaukee is the western headquarters of the Friedmann "cure" concern. The assistant commissioner of health of that city, Dr. E. Wells Kellogg, seems to be hand-in-glove with those who are exploiting the remedy. On the other hand, the physicians of Milwaukee, practically as a unit, condemn the Friedmann business, and some time ago the Medical Society of Milwaukee County passed resolutions making clear its stand in the matter.

On November 14, Dr. E. Wells Kellogg presented a paper on the subject before the Medical Society of Milwaukee County. The paper was long and rambling, garnished with occasional bursts of oratory of political-campaign type, but containing nothing regarding the nature of the remedy, its method of preparation, or the manner in which it is supposed to bring about the alleged wonderful results. It was devoted chiefly to criticism of the medical profession of the United States and to panegyric of Friedmann and those connected with him. After the paper was read, a number of well-known Milwaukee physicians discussed it freely and fully, and in a manner that left no doubt as to their marked disapproval and condemnation of the whole wretched Friedmann business. The society then passed resolutions, affirming its previous unfavorable opinions in every particular, with the unanimous vote of what was considered the largest attendance ever present at any of the society's meetings.

The Milwaukee newspapers, and for that matter, the newspapers of any city, might be expected to give a brief news-notice of the meeting of its local medical society. Most of the Milwaukee newspapers, with one exception, did this; the exception was the *Sentinel.* This paper reprinted Dr. Kellogg's address verbatim, leading off with display headlines: "MEDICAL MEN HEAR PRAISE OF FRIEDMANN—DEFENSE OF NEW TREATMENT BY DR. E. WELLS KELLOGG." This appeared in the most prominent position on the front page, and, in addition, occupied nearly the whole of one of the inner pages of the paper. While, however, the *Sentinel* devoted over a page of its space to Kellogg's defense of Friedmann, it gave just two inches, by actual measurement, to the action of the medical society in repudiating it, and did not report a single word of the discussion that followed the reading of the paper! We understand that the meeting at which the Kellogg paper was read lasted until midnight, and as the paper was reproduced verbatim in the next morning's issue of the *Sentinel,* it is fairly evident that the whole thing was in type before it was read.

The Milwaukee *Sentinel* is apparently a great deal more concerned in "boosting" the Friedmann "cure" than it is in giving the public both sides and letting it judge for itself. At least we may be justified in assuming that the *Sentinel's* wilful suppression of practically everything that was said against the Friedmann "cure" and its unheard-of "featuring" of a paper read before a scientific body are prompted by a lively sense of benefits to come — or already received. This much, at least, we may infer: If Friedmann's remedy were being introduced in a conservative, scientific, non-commercial way, the *Sentinel* would not have devoted a stickfull of space to it. The incident is typical of the disgraceful commercialism that is characterizing the exploitation of the Friedmann "cure" in the United States.

## Current Comment

### CONTAMINATION OF MILK BY TYPHOID CARRIERS

The importance of typhoid carriers in spreading typhoid fever is now so clearly recognized as to require no special emphasis. Sometimes it is difficult to find the carrier, and no doubt many instances of outbreaks due to carriers escape recognition on this account. An instructive instance showing how difficult it may be to find the carrier is described by Gruber.[1] It appears that in Munich typhoid fever has been steadily declining during recent years, except in a small part, in which the number of cases for a time persisted and even increased; women, especially servant-maids, being affected more often than men. In one house no less than nineteen cases occurred in the course of a few years. The milk, which was raw, was supplied from four different sources, and eventually it was found that three of the distributors obtained their milk at least in part from the fourth, so that in a sense it concerned only one dairy. The strains of bacilli isolated from the patients presented certain cultural peculiarities, and as the reward of much effort the same sort of bacillus was found in the suspected milk also. After a long time, and more or less by accident, a servant-maid working in the place from which the milk mostly came was discovered to be a fecal carrier, eliminating enormous numbers of bacilli, among which some gave cultural characters similar to those peculiar to the strains from the patients and from the milk. This person was removed from her work and isolated, whereupon the epidemic ceased. So far as could be determined, she had never had typhoid fever. The evidence indicates clearly that about one hundred and fifty cases of typhoid must be attributed to this carrier, who of course was quite innocent, not knowing anything of her condition and its results. This, then, is another instance showing the danger of raw milk and how easily it may become the vehicle of disease, even when the general conditions of milk production are quite satisfactory, which seems to have been the case here. Producers of so-called certified milk constantly face the danger of unwittingly employing a person who is a typhoid carrier. Gruber points out that, as things are, the best way is to pasteurize our milk properly.

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[1] Gruber: Ueber Typhuserkrankungen in München durch eine Bacillenträgerin, Arch. f. Hyg., 1913, lxxx, 272.

## THE ALLEGED DECISION AGAINST THE AMERICAN MEDICAL ASSOCIATION

So long as the American Medical Association confined itself strictly to scientific work, only soft words, if any at all, were used in speaking of it. When, however, about eight years ago it began to fulfil its broader and more humanitarian functions—began to do things—then came a change. When it started to publish facts regarding fraudulent proprietary medicines; to lay before the public the damning truths regarding the Great American Fraud—"patent medicines"; to expose the commercialism that controlled too many of the medical schools—in a word, to attack various "vested interests" whose existence is largely due to the credulity of medical men and the public — the "soft words" were forgotten, and vicious, malignant opprobrium and epithet took their place. Recently, through newspapers, medical journals, circular letters, etc., the public and the medical profession have been led to believe that the courts have rendered a decision against the American Medical Association to the effect that the Association is illegally organized and is conducting its affairs contrary to law. It is not the policy, either of The Journal or of the Association to notice the many and varied attacks made on them—life is too short; but the Trustees, believing that many were being misled regarding the decision, have considered it wise to let the actual state of the case be known. Their statement of facts regarding this matter will be found on page 1920 of this issue.

## FULL-TIME, SALARIED CLINICAL PROFESSORS

For several years the necessity for having salaried full-time professors in charge of the laboratory branches in medical schools has been recognized, and in the recent agitation for improvements the number of such professors has been largely increased. It is only during the last few years, however, that serious consideration has been given to the matter of placing the clinical chairs on a similarly salaried basis. To a limited extent this has already been done in a few clinical chairs in the Yale Medical School, the University of Pennsylvania, Washington University, Leland Stanford Junior University, the University of California and others. In these institutions, however, the professor's practice has been limited to consultation practice, and there is no evidence that he is prevented from accepting fees for such service. In the provision accompanying the gift of $1,500,000, reported a few weeks ago as having been given by the General Education Board to the Johns Hopkins Medical School, the chairs of medicine, pediatrics and surgery are to be placed on a salary basis, and the holders of those chairs, although free to carry on what practice they desire, are not to charge fees for such work. They are to be given salaries, generous from the point of view of teachers and research men, but not large when compared with the enormous incomes received by the occupants of such chairs in some medical schools. The change is radical, but there are doubtless many clinical teachers who would gladly avail themselves of the fixed, though smaller income which will leave them free to make teaching and research in clinical medicine their first work in life. It may require time to bring about a proper readjustment of these matters and still retain for our medical schools the services of the best clinical teachers. Placing full-time, salaried professors in charge of the laboratory branches has developed a higher quality of teaching in those departments and added largely to the quantity and effectiveness of medical research. There is no doubt that the securing of full-time, salaried professors in the clinical chairs will have an equally beneficial effect; it will not only elevate the standards of clinical instruction, but also develop a more extensive research along the lines of clinical medicine, leading to a wider application of new discoveries in the treatment of disease. In the teaching hospitals connected with these medical schools, furthermore, the patients will secure treatment according to the latest and most improved methods developed through more careful study and research by these full-time professors. In any event the results of this innovation will be watched with interest and with confidence that no backward step has been taken.

## UNIQUE FERMENTATIVE CHANGES INDUCED BY BACTERIA

Recently we called attention[1] to the remarkable phenomena described by Neuberg and his collaborators in Berlin[2] involving vigorous fermentation, that is, liberation of carbon dioxid, when yeast is brought into contact with certain organic substances other than sugar. Pyrotartaric acid, for example, responds most vigorously by such a chemical decomposition when yeast-cells are transplanted into a solution of it. That this unusual manifestation is not the exclusive biochemical property of yeast-cells has now been demonstrated by investigations conducted in the university at Budapest by Drs. Karczag and Móczár.[3] They have selected as organisms typifying other low forms of life a series of bacterial forms. The results have been most striking in indicating that these organisms, in analogy with the yeast-cells, are likewise capable of inducing gas-production in the presence of pyrotartaric acid. It is particularly interesting to note that this organic compound is decomposed only by those bacteria which are accustomed to act on carbohydrates, and belong in general to the gas-producing group. For example, the colon bacillus, paratyphoid bacillus B and Gaertner's bacillus provoke gas-production in the presence of either glucose or pyrotartaric acid; the bacillus of dysentery and various types of streptococci and staphylococci fail to call forth gas-production in either. The investigation of the gas resulting from the unique reaction described above shows that it is not primarily carbon dioxid, which is the case when yeast is the active agent involved. Over 90 per cent. of the gases formed may be hydrogen with a small residue of carbon dioxid. Corresponding with this difference between the fermentative phenomena of bacteria and those of yeast toward pyrotartaric acid, the other products of this fermentation are unlike in the two cases. Where yeast is concerned, acetaldehyd arises. In the case of the bacteria referred to, however, propionic and butyric acids among other volatile products have already been identified. These observations are among the beginnings of the studies which promise to place the chemistry of the fermentative reactions on a firmer basis of definite knowledge. They further indicate that the type of carbohydrate fermentation with which chemistry has so long been familiar is but one manifestation of the biochemical activity of the numerous lower forms of organic life which play prominent parts in all sorts of physiologic and technical performances.

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[1] Alcoholic Fermentation without Sugars, editorial, The Journal A. M. A., Oct. 11, 1913, p. 1380.

[2] The literature of the subject is discussed by Neuberg, C.: Die Gärungsvorgänge und der Zuckerumsatz der Zelle, Monographie bei G. Fischer, Jena, 1913.

## THE SUSCEPTIBILITY OF ANIMALS TO HUMAN STRAINS OF TRYPANOSOMES

In connection with the investigations of the Scientific Commission of the Royal Society of London which is engaged, under the leadership of Surgeon-General Sir David Bruce, in a study of the trypanosomes causing disease in man in Nyasaland, attention has been directed to the effect of the human strains on various animals. This aspect of the subject is obviously not without importance; for the interrelation of man and animals is such in respect to the possibility of disease transmission that they can no longer be considered as entirely independent of each other where infection furnishes problems to contend with. One or the other may become the unsuspected host of species of invading organisms relatively harmless to itself, but of serious import to its neighbor. From the latest report[1] it appears that the trypanosome causing disease in man in Nyasaland is fatal to goats, sheep, dogs and the smaller laboratory animals, killing them, without exception, in a few weeks. It is less virulent to cattle, many of which escape. No difference in virulence was made out in five strains from man which were tested and which probably belonged to the species *Trypanosoma brucei*.

## HOW FAR CAN FLIES TRAVEL?

The growing evidence that insects of various types may become carriers of disease has aroused an unusual interest in the habits and "natural history" of those species, like the mosquitoes and flies, which are the foremost recognized offenders. Their modes of breeding and their normal habitats have been assiduously investigated, as have been the migratory possibilities for the individual types under consideration. The life history of the mosquito is familiar to every reader of a Sunday newspaper or popular magazine. The knowledge of where and how it breeds, whence it comes, whither it travels and how it enters into familiar and unhygienic relations with man, is disseminated everywhere. In most of the stories involving the travels of the mosquito, the species responsible for the infections in which it plays a demonstrated part is made to remain comparatively near to its original breeding-place. At best these insects fly a few hundred feet or are perchance wafted a mile or so on rare occasions in a gust of wind. Statements concerning the restricted travel of the house-fly and the stable-fly have been much of the same order. It is maintained, for example, that house-flies seldom stray more than five hundred yards from their breeding-places, although some English observations prove that they may go a mile from an infected dump to the nearest village. A curious incident in connection with the Cleveland antifly campaign has brought some rather unexpected, yet positive evidence on the the migration possibilities of flies. A request was sent for some means of relief from the plague of flies on the cribs of the water-works, situated a mile and a quarter, five miles and six miles out in Lake Erie north of the city. An investigation was undertaken by C. F. Hodge,[1] whose vigorous activities in the antifly crusade in the United States are widely appreciated. The invasion of the flies could not be charged to passing steamers or to conditions obtaining on the cribs. Although tenders live on the cribs, there are no animals and there is absolutely nothing in which flies of any kind could breed. All garbage and waste matters are dumped immediately into the lake or are put into a tight incinerator and burned daily. Lake steamers pass within about half a mile of the cribs, but none of the men had ever noticed any evidence of flies coming from them. All the crib-tenders maintain that a south wind brings a cloud of flies from the city and that a north wind carries them away. No smaller boats were anywhere near the cribs that day and seldom come near them. The only explanation which occurs to Hodge seems to be that the flies are blown at least six miles off shore, and that they gather on the cribs as temporary resting places. Attraction of any other sort cannot be a strong factor, else they would remain on shore, attracted by the animals and men along the docks and the much richer food-supply. He says that while not entirely conclusive, the evidence seems strongly to support the theory that flies of certain kinds are able to travel much farther than is commonly supposed. Flies which have traveled these long distances appear to be ravenously hungry and some of them bite viciously. It is not difficult to trap them under these conditions.

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[3] Karczag, L., and L. Móczár: Ueber die Vergärung der Brenztraubensäure durch Bakterien, I, Biochem. Ztschr., 1913, lv, 79.

[1] Bruce, D.; Harvey, D.; Hamerton, A. E., and Bruce, Lady: The Trypanosome Causing Disease in Man in Nyasaland; Susceptibility of Animals to the Human Strain, Proc. Roy. Soc. London (B), 1913, lxxxvii, 35.

[1] Hodge, C. F.: The Distance House-Flies, Bluebottles and Stable-Flies May Travel Over Water, Science, 1913, xxxviii, 512.

### THE COLD BATH IN FEVER

Stewart[1] advances the opinion that the rise of temperature in fever is incidental to a general contraction of the peripheral vessels by which more blood is supplied to the internal organs, particularly to the vessels of the splanchnic circulation. He suggests that the contraction of the peripheral vessels is a therapeutic process to be favored rather than opposed, and therefore that the means taken to reduce temperature should be such as will abstract heat and still maintain the contraction of the vessels of the extremities. For this purpose he regards the cold bath as especially suitable because it abstracts heat without dilating the cutaneous vessels. The theory on which cold bathing in fever has generally been practiced is that it acts as a tonic to the nervous system and by the production of a reaction affects better distribution of the blood. It has been advised to rub the patient while in the bath and after his removal so as to secure a reaction indicated by redness and warmth of the extremities; but if the opinion of Stewart is true, and if his experiments are confirmed, we shall be compelled to change our views as to the importance of securing a reaction. If it is desirable to maintain the internal congestion, the cold bath is an admirable means to effect this purpose, but we should avoid the reaction or at least take no pains to produce it by rubbing. The rubbing, by attracting the blood from the internal organs to the periphery, would seem calculated to defeat the purpose of the contraction of the peripheral vessels which characterizes the fever.

### PARENTERAL VERSUS ORAL NUTRITION

Scarcely ten years have elapsed since Oppenheimer[2] proposed the word "parenteral" to express a mode of introducing foodstuffs into the body by some path other than *per os*. Parenteral nutrition has thus become contrasted with oral feeding, and the new term has already found a wide acceptance. The possibilities and problems of furnishing food to the organism, subcutaneously, intravenously, intraperitoneally, or even intramuscularly, have been the subject of discussion, particularly with reference to conditions of a pathologic nature when the usual practice of feeding by way of the mouth has to be abandoned for some reason or other. The result of most of the work in this field has been to demonstrate the futility of attempting to furnish food to the cells of the body in any form other than that in which it is usually prepared by the digestive processes. Paradoxical as it may sound, most of the ordinary nutrients behave like poisons in the body when they are introduced as such parenterally and meet the tissue of the individual in their native form. Few carbohydrates can be injected directly, that is, parenterally, and become utilized in any direct manner. Cane-sugar, for example—one of the commonest of dietary ingredients—is managed like a foreign substance whenever it reaches the blood-stream in its original chemical form. The kidneys quickly eliminate it in good measure. Appropriately emulsified fats may experience a somewhat better fate, though they tend to remain deposited a long time at the site of their parenteral introduction, unless it be directly into the swiftly moving blood-stream. For proteins the practical possibilities of parenteral administration have been eliminated almost entirely. With the danger of death by anaphylactic shock ever present, few physicians would venture to furnish unaltered proteins to patients by a parenteral route. The hope of the future in the direction of parenteral nutrition lies in devising satisfactory practical schemes for employing not the dangerous native proteins, fats and carbohydrates, but rather such digested representatives thereof as are normally prepared out of our foodstuffs in the alimentary processes and are furnished for absorption. As we have remarked on previous occasions, there is an excellent opportunity for useful work in this direction to supplant oral nutrition whenever for the time being it becomes a practical impossibility.

## *Medical News*

### GEORGIA

**Epidemic Diseases.**—It is reported that 10 per cent. of the people of Savannah are suffering from dengue.

**Honor to Memory of Georgia Physician.**—At the State Normal School, Athens, November 1, was celebrated the anniversary of the birth of Dr. Crawford W. Long, discoverer of ether-anaesthesia.

**New Medical Board Officers.**—At the first meeting of the new State Board of Medical Examiners, the following officers were elected: president, Dr. Jarrett W. Palmer, Ailey; vice-president, Dr. G. Fleming, Waycross; secretary, Dr. Charles T. Nolan, Marietta.

**Tuberculosis Institute Incorporated.**—A petition has been filed for the incorporation of the W. G. Raoul Foundation. Captain Raoul set aside a bequest of $100.000, directing that it be used to combat tuberculosis by educating the people and by working for prevention as well as by treating those ill with the disease.

**Personal.**—Dr. Edgar L. Hawley, Atlanta, was shot but not seriously wounded by a burglar, November 1.——Dr. Charles F. Curtis, Decatur, was awarded a verdict of $750 October 29 in a suit for $10,000 against the city of Atlanta for injuries alleged to have been received through the city's carelessness in leaving a dangerous hole in one of the streets.——Dr. and Mrs. Dunbar Roy, Atlanta, have returned from Europe.

**New Officers.**—Tenth District Medical Society at Augusta, November 5: president, Dr. George A. Traylor; secretary-treasurer, Dr. H. William Shaw, both of Augusta.——Georgia Surgeons' Club, organized at Atlanta November 5: president, Dr. Edward C. Davis, Atlanta; vice-president, Dr. Thomas J. McArthur, Cordele; secretary-treasurer, Dr. Robert M. Hardin, Rome. The club decided to visit New Orleans as a body in February, and to take other medical trips later on from time to time during the year.

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[1] Stewart: Jour. Exper. Med., October, 1913.

[2] Oppenheimer, C.: Ueber das Schicksal der mit Umgehung des Darmkanals eingeführten Eiweissstoffe im Tierkörper, Beitr. z. chem. Phys. u. Path. (Hofmeister), 1904, iv, 263.

## ILLINOIS

**Children's Clinic.**—St. Joseph's Hospital, Alton, has established a children's clinic which is open every Tuesday and Friday morning, from 8 to 11 o'clock.

**Personal.**—Dr. and Mrs. William H. Mercer, Raymond, have sailed for Europe.——Dr. George R. Smith, Bloomington, who was stricken with cerebral hemorrhage recently, is reported to be improving.

**New Officers.**—Southern Illinois Medical Association, thirty-eighth annual session at Duquoin November 7: president, Dr. Charles W. Lillie, East St. Louis; secretary, Dr. Alonzo B. Capel, Shawneetown. Mount Vernon was selected as the next place of meeting.

**State Hospital Site Selected.**—The members of the State Board of Administration, on November 15, definitely settled that the new million-dollar hospital for the insane should be located on the northeastern portion of the Kilpatrick farm, 1½ miles west of Upper Alton.

### Chicago

**Red Cross Branch to Be Established.**—Mr. Ernest P. Bicknell, director of the American Red Cross, announced that the work of the national body has become so heavy that it has been decided to divide the work into four divisions, of one of which Chicago is to be the headquarters.

**Asked Increased Appropriation.** — Health Commissioner Young has asked an appropriation of $1,190,278 for the Department of Health for the coming year. The actual increase over the last appropriation is $450,000, of which $335,000 is for reorganization of the department and increase in the staff.

**Ophthalmologic Banquet.**—The meeting of the Chicago Ophthalmological Society, November 17, was preceded by a reception and banquet in honor of Lieut. Col. Robert H. Elliot, I.M.S., Madras, India; Dr. Edward Jackson, Denver; Dr. George Edmund de Schweinitz, Philadelphia, and Dr. John E. Weeks, New York City.

## KANSAS

**Personal.**—Dr. George Nealley, Lansing, is reported to be seriously ill as the result of a cerebral hemorrhage.——Dr. Andrew Pearson, Wakefield, was seriously injured in an automobile accident October 25.——Dr. Mark L. Bishoff, Topeka, has been appointed superintending physician of the Santa Fe Employees' Hospital, Fort Madison, Ia.

**Society Defends Fryer.**—At the meeting of the Leavenworth County Medical Society September 18, resolutions were unanimously adopted which enter a vigorous protest against and condemn the action of the board of managers of the Western Branch National Home for Disabled Volunteer Soldiers, in making charges against Dr. John L. Fryer, surgeon of the Western Branch, and requesting his resignation; bearing testimony to the esteem in which Major Fryer is held by the members of the society, and to his efficiency in the management of the Soldiers' Home Hospital.

## KENTUCKY

**New County Sanatoriums.**—At the election November 4, Fayette, Herderson and Christian counties voted to establish tuberculosis sanatorium districts.

**Personal.**—Dr. John H. Buschemeyer has been elected mayor of Louisville.——Dr. John H. Van Deren, Cynthiana, was painfully injured by the overturning of his automobile between Cynthiana and Paris, November 5.——Dr. William R. Ruble, Smith's Grove, is reported to be seriously ill in a sanitarium in Cincinnati.——Dr. C. W. Froedge, Glasgow, fell from his horse October 20, fracturing his right forearm.——Dr. John W. Watson, Henderson, was seriously injured in a runaway accident recently.

## LOUISIANA

**New Officers.**—Ascension Parish Medical Society organized at Donaldsonville: president, Dr. E. Kittredge Simms, Donaldsonville; secretary-treasurer, Dr. Allen W. Martin, Alexandria.

**Personal.**—Dr. and Mrs. William T. O'Reilly, New Orleans, celebrated their silver wedding anniversary October 24.——Dr. and Mrs. Otto Lerch, Dr. and Mrs. L. Sexton and Dr. Edmund Moss, all of New Orleans, have returned from abroad.

**Clinic for Italians.**—A free clinic for the Italian poor of New Orleans was opened November 10 by the Italian Hall Association. The clinic is open from 8:30 to 9 in the morning and the physicians of the staff alternate in duty at the clinic.

**New Régime at Charity Hospital.**—Dr. C. B. Wilkins assumed charge as superintendent of Charity Hospital, New Orleans, October 1. Dr. Wilkins is receiving the most cordial support both from the management of the hospital and the visiting and resident staff. The services have been divided as follows: Surgical division, nine chiefs—Drs. Rudolph Matas, Frederick W. Parham, Hermann B. Gessner, John Smyth, Martin, Felixi A. Larue, Joseph A. Danna, Stephen W. Stafford and James M. Batchelor; medical division, six chiefs—Drs. John B. Elliott, Jr., John T. Halsey, George S. Bel, Wellman, George F. Patton and Joseph M. Elliott; gynecological and obstetrical division, four chiefs—Drs. Paul Michinard, C. J. Miller, Clark and William Kohlmann; division of children's diseases, medical, three chiefs—Drs. William W. Butterworth, Laurence R. DeBuys and Charles A. Borey; orthopedics and surgical diseases, children's division, three chiefs—Drs. Erasmus D. Fenner, Herman Oechsner and Edward S. Hatch; ear, nose and throat division, three chiefs—Drs. Charles J. Landfried, Otto Joachim and Homer J. Dupuy; eye division, two chiefs—Drs. Marcus Feingold and Theodore J. Dimitry; skin division, three chiefs—Drs. Isadore Dyer, Henry E. Menage and Joseph N. Roussel, and genito-urinary division, three chiefs—Drs. Charles L. Chassaignac, Joseph Hume and Abe Nelken. Each visiting chief has been assigned the wards, beds and out-door clinics for which he is to be responsible. The remainder of the visiting staff has been graded and assigned to service under the different chiefs. The following resident medical officers have been appointed: Dr. Lewis B. Crawford and Dr. Lucien A. Fortier to be resident surgeons; Dr. William B. Chamberlain to be resident gynecologist and obstetrician; Dr. Houston Staring to be resident physician.

## MAINE

**Personal.**—Dr. Arthur G. Wiley, Bar Mills, is said to be seriously ill with typhoid fever at his home.——Dr. Willis G. Jefferson, Portland, severed his right hand at the wrist November 4. It is supposed the act was done in a fit of religious frenzy.

**Fairfield Sanatorium.**—The Central Maine Association for the Relief and Control of Tuberculosis is erecting at Fairfield a new building for incipient cases with a capacity of forty beds, to replace the building destroyed by fire in July. It also plans to erect a hospital for advanced cases, a cottage for children suffering from tuberculosis and an administration building. The medical staff has been reorganized with Dr. Auguste U. Des Jardins, Waterville, as medical director, and the following consulting board: Drs. Addison S. Thayer, Portland, William C. Peters, Bangor, O. C. S. Davies, Augusta, and Frederick C. Thayer, Waterville, consulting physicians; Dr. Donald B. Cragin, Waterville, consulting surgeon, and Dr. John F. Hill, Waterville, consulting laryngologist.

## MASSACHUSETTS

**Quincy Wants Contagious Hospital.**—An order appropriating $35,000 for the new hospital for contagious diseases in Quincy has been introduced into the City Council.

**Personal.**—Dr. Frank G. Fay, Worcester, is chief legatee in the will of Louisa C. Whittemore of Worcester, who died a few days ago.——Dr. John H. Gifford, Fall River, has been appointed society medical examiner of Bristol County.

**Medical Alumni Meet.**—The Harvard Medical Alumni Association held a reception November 14 at the Harvard Medical School and the neighboring hospitals. At the medical school all the laboratories were open and demonstrations were given by members of the staff, and special clinics and demonstrations were also offered at the hospitals near the medical school. An informal reception was held in the Administration Building, after which light refreshments were served.

**The School for Health Officers.**—As set forth in the Monthly Bulletin of the Massachusetts State Board of Health, September, 1913, the Massachusetts Institute of Technology and the Harvard University have joined hands in establishing a school for health officers. The department of preventive medicine of Harvard and the department of sanitary engineering of the Graduate School of Applied Science of the same institution and the department of biology of the Massachusetts Institute of Technology are the departments having supervision over the school. The school for health officers will be an administrative entity under the charge of an administrative board, at present to be composed of Prof. W. T. Sedgwick of the Institute of Technology; Prof. M. J. Rosenau of the Harvard Medical School and Prof. Geo. C. Whipple of the Graduate School of Applied Science. Professor Rosenau will be director of the school. Graduates in medicine of Harvard University and other recognized medical schools will be admitted on their records, and registered as candidates for the certificate of public health. Bachelors of science in biology and public health of the Institute of Technology and other recognized institutions may also be admitted. Persons having certain other degrees and experience from other schools and colleges may also be admitted to the course with certain conditions. Special students not candidates for the certificate of public health who desire to fit themselves for some special field will be admitted and may take any course for which they are properly qualified. While the medical degree is not required for the certificate of public health, candidates are advised to obtain this degree first, as it is felt that the higher positions in public health work come more readily to those who have a medical degree. There will be no prescribed curriculum for the certificate, but they will be required to elect a schedule of courses to meet their needs. The school for health officers will not interfere in any way with the present doctor of public health degree (Dr. P.H.) now offered by Harvard University.

### MICHIGAN

**New Quarters for Medical Society.**—Dr. Edward G. Martin, Detroit, announced at the last meeting of the Wayne County Medical Society that the new auditorium, which will accommodate 500 persons, will be completed in January next.

**Personal.**—Dr. Daniel H. Eaton, Kalamazoo, suffered a fracture of the skull in an automobile accident, November 5.——Dr. Robert L. Dixon, Lansing, secretary of the State Board of Health, has resigned to accept the superintendency of the State Epileptic Farm Colony at Wahjameja.——The Lansing Clinical Club gave a complimentary dinner to Dr. Louis W. Toles, president of the club, November 4.——Dr. Hugh Cary, Detroit, is reported to be critically ill.——Drs. Thomas A. Baird, Edward C. Warren, J. William Gustin, George W. Moore, Munger, and Virgil L. Tupper, Bay City, have returned from Europe.——Dr. Joseph A. M. Clark, Cascade, was painfully injured in a collision between his motor car and a street car in Grand Rapids, October 27.

**New Officers.**—Michigan Association for the Prevention and Relief of Tuberculosis at Kalamazoo November 7: president, Dr. Herman Ostrander, Kalamazoo; secretary, Miss Carol S. Walton, Ann Arbor; treasurer, Dr. Henry J. Hartz, Detroit.——Tri-County Medical Society at Cadillac, November 6: president, Dr. Otto L. Ricker, Cadillac; vice-president, Dr. Albert E. Stickley, Mesick; secretary-treasurer, Dr. Rudolph J. E. Oden, Cadillac.——Eaton County Medical Society at Charlotte, November 6: president, Dr. C. A. Stinchcombe, Eaton Rapids; secretary-treasurer, Dr. Cassius S. Sackett, Charlotte.——Southwestern Michigan Eye, Ear, Nose and Throat Society organized at Kalamazoo, November 4: temporary chairman, Dr. Edward J. Bernstein, Kalamazoo; temporary secretary, Dr. Wilfrid H. Haughey, Battle Creek.——Genesee County Medical Society at Flint, October 28: president, Dr. Mark S. Knapp; secretary, Dr. Robert D. Scott, both of Flint.——Tuscola County Medical Association at Caro: president, Dr. Robert H. Steinbach, Richville; secretary-treasurer, Dr. Wynne C. Garvin, Millington.

### MINNESOTA

**New Officers.**—Blue Earth Valley Medical Society at Blue Earth October 30: president, Dr. Peter F. Holm, Wells; secretary, Dr. John A. Broberg, Blue Earth (reelected).

**State to Sell Antitoxin at Cost.**—Dr. Henry M. Bracken, Minneapolis, secretary of the State Board of Health, has notified local boards throughout the state that the department of health is now prepared to supply diphtheria antitoxin at cost.

**Southern Minnesota Physicians to Meet.**—At the annual meeting of the Southern Minnesota Medical Association to be held in Mankato, December 2 and 3, arrangements have been made for addresses by Dr. James B. Herrick, Chicago, on "The Bundle of His," with lantern slide demonstrations, by Dr. Ludvig Hektoen, Chicago, on "The Cause of the Crisis in Pneumonia," and by Dr. Robert H. Babcock, Chicago, on "Acute and Sub-Acute Endocarditis," with specimens. Dr. Babcock will also hold a clinic on diseases of the heart and lungs. These papers from outside men are in addition to a number of excellent articles by members of the profession of Southern Minnesota.

### NEBRASKA

**For Nebraska Newspaper Readers.**—The owner of the Omaha *World-Herald* is Senator Gilbert M. Hitchcock, and in one issue of his newspaper one reads a half-page advertisement, headed "Cancers Cured Without the Dreaded Plaster Treatment"—a full half-page of delusion for the victims of an incurable disease. While the proprietor is kept busy at Washington his journal fairly reeks with an odious class of medical advertising. But who is downhearted? Ten years ago United States senators were giving out patent-medicine indorsements to the Great American Fraud, testimonials which they were willing to see published broadcast in newspaper advertisements. Ten years hence newspapers owned by United States senators will be turning down quack advertisements, if not because senators have improved by that time, then because their reformed competitors will have forced them into virtue's way. All Senator Hitchcock needs is a little time to think it over.—*Collier's Weekly.*

### NEW YORK

**An American Spa.**—Dr. Paul Haertl, head of the Royal Chemical and Balneologic Laboratory, Bad Kissingen, Germany, arrived in New York November 12. He came to this country on the solicitation of Dr. Simon Baruch, New York City, who had urged the reservation commission, of which George Foster Peabody is chairman, to obtain counsel and cooperation of Dr. Heartl in the final plans for making Saratoga Springs a health resort on which physicians and the public may depend. The state has expended $1,000,000 in the purchase of the mineral water rights and 250 acres of land with the idea of developing a great health resort.

#### New York City

**Personal.**—Mr. Frederick B. Morlock, for ten years chief clerk and assistant treasurer of the Presbyterian Hospital, has been appointed superintendent of the Flower Hospital.——Dr. Joseph W. Moore of Manhattan State Hospital, Wards Island, has recently been appointed first assistant physician at the Matteawan State Hospital.——Dr. D. Bryson Delavan has recovered from a serious operation which he underwent last spring and has resumed his practice.

**All Milk for Drinking Purposes Must Be Pasteurized.**—Health Commissioner Lederle has announced that the Board of Health has adopted two regulations affecting the sale of raw milk. The first amends the sanitary code so as to forbid the sale of raw milk for consumption on the premises and removes Grade B, the class of raw milk that was formerly permitted to be sold under that designation. Only milk produced under regulations governing the sale of certified milk can be sold raw; all other grades of milk must be pasteurized. This action is the last step in a carefully worked out plan that has gradually been put into effect during the past four years to bring about the pasteurization of the entire milk supply of the general market of New York City. Warnings have also been issued to housewives by the health department warning them that they are liable to prosecution for returning to the drivers of milk wagons bottles which have not been properly cleansed.

**Large Donation to Medical School.**—The Board of Trustees of Cornell University announces that a gift of about $4,000,000 has been made to endow the Cornell University Medical College. It is understood that the donor is Col. Oliver Hazard Paine, New York City, who gave $500,000 several years ago for the establishment of the school. This endowment fund will provide an annual income of $200,000 for the medical school. This is one of the greatest individual gifts ever given to an educational institution, and it is especially pleasing that it is given for the advancement of medical education. With this increased endowment Cornell is given an exceptional opportunity to develop a thorough, systematic and complete course of training for medical students, under the ablest teachers and in an atmosphere of medical research. The school cannot fail to turn out better-equipped doctors, imbued with a faith in greater things to come in medicine, and enthusiastic in their desire to aid in solving the complex problems of alleviating and preventing disease.

**Babies' Welfare Work Reduces Infant Mortality.**—The Babies' Welfare Association has announced the results of an investigation made by the Department of Health, covering the period of hot weather. Out of 33,000 babies under 2 years of age enrolled in the fifty-five milk stations of the department. between January 1 and November 1, the death rate was only four to a thousand, in spite of the fact that a large number of these babies were suffering from digestive disturbances at the time of enrolment. During June, July and August only 113 milk station babies died. At the same time the death-rate of the babies of the city under 2 years of age was 75 per thousand. There have been 493 fewer deaths of infants under 1 year of age in all the boroughs than during the same period of time in the previous year. If this record continues for the remainder of the year New York will be able to show an infant mortality of only 100 or less for each one thousand births.

**New Hospitals.**—The facilities for the treatment of tuberculosis in New York City were enlarged by the opening of a new hospital known as Sea View, located at Castleton Corners, Staten Island, at a cost of more than $3,000,000. Eighty patients have already been admitted to the institution which has accommodation for 1,000 patients who are housed in eight pavilions arranged in a semi-circle so that sunlight may enter every room and ward.——The new building of the Herman Knapp Memorial Eye Hospital at Fifty-Seventh Street and Tenth Avenue has been opened. The hospital was founded by the late Herman Knapp in 1869 and has been known as the New York Ophthalmic and Aural Institute. In this institute more than 420,000 patients have received treatment. The new building is a seven-story, fire-proof structure with the most modern equipment for the treatment and study of diseases of the eye.——The corner-stone of the new Hospital for Deformities and Joint Diseases was laid November 5. The principal address was delivered by Dr. Abraham Jacobi.

## NORTH CAROLINA

**Sanatorium to Open.**—The State Sanatorium for Tuberculosis, Montrose, is to be opened December 1. The institution has accommodation for more than 100 patients and many applications have already been received.

**Personal.**—Dr. James W. Magee, Raleigh, who has been ill in his home for several weeks, has recovered and has resumed practice.——Dr. John L. Carroll, Asheville, his wife, sister and brother sustained painful injuries in an automobile accident recently, but all are reported to be recovering.

**Fire in Medical School.**—A fire in the Leonard medical building, November 6, burned out the laboratories on the two upper floors and seriously damaged the laboratory on the first floor. The walls of the building are intact but the roof was badly damaged. The building is being repaired and will be reequipped as soon as possible.

**Exhibits at Teachers' Assembly.**—During the annual session of the North Carolina Teachers' Assembly in Raleigh, November 26-29, Dr. Albert Anderson, superintendent of the State Hospital for the Insane, will have a mental hygiene exhibit and will hold conference for the benefit of the teachers. The State Board of Health will also have an exhibit.

**Antityphoid Vaccination.**—The State Board of Health announces: "Vaccination against typhoid has successfully passed all the tests of science and practice, and has won as prominent a place among sanatoriums as has vaccination against small-pox." The board, having established a plant for the preparation of antityphoid vaccine under authority granted at the last session of the state legislature, invites physicians who wish to employ the vaccine to apply for it as it will be furnished without cost.

**School for the Feeble-Minded.**—At the recent session of the legislature an appropriation of $70,000 was made to complete the buildings and open the State School for the Feeble-Minded, Kinston, on which work was begun about two years ago. Originally the state appropriated $60,000, later adding $10,000, which was supplemented by donations from citizens of Kinston and Lenoir, making the actual value of the state's investment in the institution fully $120,000. The work of Dr. Alfred A. Kent, Lenoir, state senator, and Dr. James A. Gordon, Jamestown, state representative, was indefatigable and their efforts were ably aided by Dr. Ira M. Hardy, later secretary of the board of trustees and superintendent of the institution. Dr. Hardy has given his entire time to this work for the last two years, and expects the building will be completed and the school opened next year.

## PENNSYLVANIA

**New Officers.**—Bucks County Medical Society at Doylestown, November 14: Dr William LeComte of Bristol, president.

**Hospital at Mine.**—The Reading Coal and Iron Company has established, for the benefit of its employees, a hospital at its Locust Spring colliery.

**Personal.**—Dr. Frederick W. Brown has been elected mayor of Franklin.——Dr. Howard Pursell has been appointed president of the Bristol Board of Health.

**Hospital Staff Entertained.**—The physicians of the staff of the Wilkinsburg State Hospital were given a dinner November 6, by Dr. William C. Reese, Scranton.

**Beriberi on Ship.**—A case of beriberi was discovered among the Chinese crew of the British steamship *Strathmore.* The victim is in the Quarantine Hospital at Marcus Hook.

**Contract Awarded.**—A contract has been awarded for the brick and stone buildings to be erected at Fairview, Pa., for the State Hospital for the Criminal Insane. The buildings will cost $135,000.

### Philadelphia

**Hospital to Change Location.**—The Lebanon Hospital, now located at Fourth and Spring Garden Streets, has purchased three large properties at Seventh and Columbia Avenue and plans to erect a new hospital on this site at a cost of $40,000. This institution was established in 1909 and its work has expanded to such an extent that the present building is wholly inadequate to the demands of this congested section of the city.

**To Standardize Training of Nurses.**—At the eleventh annual session of the Graduate Nurses' Association of Pennsylvania, held November 14 in the College of Physicians, plans for the standardization of the training of nurses were considered. The nurses discussed the advisability of combining small nurses' training schools with large ones in order to increase the efficiency. The committee of fifteen nurses was appointed to cooperate with the State Board of Examiners in working for a standard system of education in all nurses' training schools throughout the state.

**Personal.**—Dr. Robert Tait McKenzie, professor of physical education in the University of Pennsylvania and a sculptor of renown, has completed a medallion of Dr. Horatio R. Storer of Newport, R. I.——Mr. Daniel Baugh, on behalf of the Jefferson Medical College, has sent out invitations for a reception at his residence, December 2. The guests of honor will be Dr. W. W. Keen, emeritus professor of surgery; Dr. W. Joseph Hearn, emeritus professor of clinical surgery; Dr. James C. Wilson, emeritus professor of medicine; Dr. James W. Holland, emeritus professor of chemistry and toxicology.——Dr. Herbert M. Goddard has been appointed to the post of laryngologist to the Jewish Hospital.——Dr. Charles H. Frazier, professor of clinical surgery at the University of Pennsylvania, was elected president of the Public Charity Association of Pennsylvania, October 30.

**County Society Condemns Critics of Judiciary.**—At a recent meeting of the Philadelphia County Medical Society a resolution was adopted repudiating the attack made upon the judiciary of the courts of common pleas in a paper read at the recent meeting of the state society in this city. The resolution was, in part, as follows: That the board of directors of the Philadelphia County Medical Society deplore the criticism of the judiciary of the Common Pleas Courts of Pennsylvania, recently made by a member of the Medical Society of the State of Pennsylvania during the recent session of the society in Philadelphia. The board of directors feels that the members of the profession in Philadelphia who appear from time to time before our courts of common pleas have been treated with the utmost consideration, courtesy and justice by those presiding. Judge Norris S. Barrett, of the Court of Common Pleas has, in a communication, thanked the local county society for this action.

**Officers Elected.**—At the business meeting of the Philadelphia County Medical Society, October 15, the following nominations were made for officers to serve during the year 1914: president, Dr. William D. Robinson; vice-president, Dr. Herbert A. Hare; secretary, Dr. William S. Wray; treasurer, Dr. Edward A. Shumway; directors, Drs. Herman B. Allyn, G. Morton Illman, John D. McLean. The following delegates were named for the State Medical Society: Drs. Wilmer Cruson, G. A. Knowes, Thomas R. Currie, J. F. Schamberg, and William M. Welsh. The following officers were nominated at the regular quarterly meeting of the Medical Club, October 17: president, Francis X. Dercum, Samuel D. Risley, Wilmer Krusen; first vice-president, McCluney Radcliffe; secretary, William S. Wray; treasurer, Lewis H. Adler; governor, Clarence P. Franklin; directors, Ellwood R. Kirby, William E. Hughes, Swithin Chandler, Paul Judd Sartain, Alexander McAllister, E. Horgan, Matthew Woods, H. H. Whitcomb, Herbert B. Carpenter, Rae S. Dorsett.

## SOUTH CAROLINA

**State Society Wins Suit.**—*In the case of the South Carolina Medical Association against Frank B. Griffith*, a suit which grew out of the building of the Roper Hospital, Charleston, the opinion of the United States District Judge, filed October 4, is in favor of the society.

**Personal.**—Dr. Ernest M. Rast has been reelected intendant of Cameron.——Dr. Pinckney V. Mikell has succeeded Dr. Samuel E. Harmon as a member of the Health Board of Columbia.——Dr. James L. Bolt, Easley, has been elected a member of the house of representatives from Pickens County.

**New Officers.**—Charles County Medical Association at Charleston November 6: president, Dr. William H. Johnson, Charleston; secretary, Dr. Michael M. Edwards.—Third District Medical Association at Abbeville: president, Dr. Thomas L. W. Bailey, Clinton; secretary-treasurer, Dr. J. E. Presley, Abbeville.

## WISCONSIN

**Sanatorium Notes.**—The Eau Claire County Tuberculosis Sanatorium, recently erected at a cost of $36,000, is ready to receive patients.——The board of control has decided to establish a tuberculosis camp at Tomahawk Lake, at an expense of about $10,000.

**Inebriate Ward Ready.**—The inebriate ward of the Milwaukee County Hospital for the Insane has been opened, and instead of sentencing habitual drunkards to the House of Correction for short periods, they will now be committed to the inebriate ward for treatment.

**Antituberculosis Officers Elected.**—At the fifth annual meeting of the Wisconsin Antituberculosis Association held in Milwaukee, the following physicians were elected officers: president, Dr. Mazyck P. Ravenel, Madison; second vice-president, Dr. Gustave Windesheim, Kenosha; recording secretary, Dr. Clarence A. Baer, Milwaukee, and executive secretary, Dr. Hoyt E. Dearholt, Milwaukee.

**Hospital Notes.**—A five-story, fire-proof building will be erected by the Mount Sinai Hospital Corporation in Milwaukee at Twelfth and Cedar streets. The building will be of brick and stone construction and will cost about $160,000.——The Common Council of Waukesha has selected a site for a municipal hospital at North Street and Delafield Avenue.——An addition to the Evangelical Hospital, Milwaukee, was authorized by the Board of Directors at its last meeting. The annex will adjoin the present structure and will cost $30,000.

**Personal.**—Dr. Horace M. Brown, Milwaukee, has returned from abroad.——Drs. A. L. Cludas and Louis Clonchlin of Mexico City were recent visitors in Milwaukee.——Dr. Fred Johnson, North Freedom, has been appointed district officer of the State Board of Health with headquarters at Eau Claire.——Dr. George N. Hidershide, Arcadia, a Civil War veteran, has received a medal of honor from the war department.——Dr. Mazyck P. Ravenel, Madison, has been appointed chairman of the national committee on standard methods for the bacteriological examination of milk.——Dr. Charles O. Latham, Darlington, has been appointed resident physician at the State Reformatory for Boys, Green Bay.——Dr. Helen A. Binnie, Milwaukee, has been appointed medical superintendent of the Miners' Hospital, Frostburg, Md.

## GENERAL

**Congress Elects Officers.**—The following officers of the Clinical Congress of Surgeons of North America were elected, Thursday, November 13, 1913; president, Dr. John B. Murphy, Chicago; vice-president, Dr. George E. Armstrong, Montreal, Quebec; secretary, Dr. Franklin H. Martin, Chicago (reelected); treasurer, Dr. Allen B. Kanavel, Chicago (reelected); business manager, Mr. A. D. Ballou, Chicago (reelected). The next meeting of the congress will be held in London, England, the fourth week in July, 1914. A special committee was appointed to take up the work of standardization of surgery. This committee is composed of Drs. Lewis S. McMurtry, Louisville, Ky.; Charles H. Peck, New York City; Henry P. Newman, San Diego, Cal.; William L. Cousins, Portland, Me., and Charles A. Davison, Chicago.

**American College of Surgeons.**—The convocation exercises of the American College of Surgeons were held in Chicago, November 12. The names of the surgeons who were made members of the college were read by the secretary, Dr. Franklin H. Martin, Chicago, and the president, Dr. John M. T. Finney, Baltimore, pronounced them fellows of the college. The number admitted to the organization was 1,050.

**North Pacific Surgical Association.**—The surgeons of Oregon, Washington and British Columbia met in Portland, Ore., March 9, 1912, and organized the North Pacific Surgical Association, with a charter membership limited to thirty-six, and adopted the following qualifications for membership: "Candidates for membership shall be 30 years of age, graduates of at least five years' standing of recognized schools of medicine, members in good standing of their state and provincial medical associations, whose achievements in surgery, as practitioners, operators, investigators, teachers or authors, entitle them to membership." The following officers were elected for the year 1913: president, Dr. C. W. Sharples, Seattle; vice-presidents, Drs. A. S. Monro, Vancouver, B. C., and Andrew C. Smith, Portland; secretary-treasurer, Dr. J. B. Eagleson, Seattle; councilor, Dr. A. Raymond, Seattle, and recorder, Dr. J. M. Neff, Spokane. The next meeting will be held in Seattle, December 12 and 13.

**Prevention of Infant Mortality.**—The fourth annual meeting of the American Association for Study and Prevention of Infant Mortality was held in Washington, D. C., November 14-17, under the presidency of Dr. L. Emmett Holt, New York City. There were sessions on nursing and social work, pediatrics, obstetrics, eugenics, public school education for prevention of infant mortality, and vital and social statistics. The association elects its president a year in advance, and Mr. Homer Folks of New York City was elected for 1915. The president for the ensuing year is Dr. J. Whitridge Williams of Baltimore. The following other officers were elected: vice-presidents, Dr. M. J. Rosenau, Boston, and Miss Julia C. Lathrop, Washington; secretary, Dr. Philip Van Ingen, New York; executive secretary, Miss Gertrude Knipp, Baltimore (reelected), and treasurer, Mr. Austin McLanahan of Baltimore.

**Congress of Tropical Medicine.**—The third biennial congress of the Far Eastern Association of Tropical Medicine was held in Saigon, November 8-15, under the presidency of Dr. Clarac, inspector of the sanitary service in the colonial troops and inspector of sanitary and medical services of Indo-China. The work of the congress was divided in the following groups: (1) protozoology, helminthology; (2) cholera, plague, leprosy, tuberculosis; (3) tropical fevers (including paludism), beriberi, dysentery; (4) obstetrical surgery, infantile diseases; (5) climate, hygiene, sanitary regulations; (6) materia medica, pharmacology; (7) veterinary medicine, epizootics.

**Life Insurance Directors Elect.**—At the twenty-fourth annual meeting of the Association of Life Insurance Medical Directors of America, held in Philadelphia October 29 and 30, the following officers were elected: president, Dr. Edward K Root, Hartford, Conn., Aetna Life Insurance Company; vice-president, Dr. William Evelyn Porter, Mutual Life Insurance Company, New York City; secretary, Dr. Faneuil S. Weisse, Mutual Life Insurance Company, New York City (reelected); treasurer, Dr. Augustus S. Knight, Metropolitan Life Insurance Company, New York City (reelected).

**Tri-State Physicians Meet.**—At the thirtieth annual meeting the the Tri-State Medical Association of Mississippi, Arkansas and Tennessee, held in Memphis November 11-13, the following officers were elected: president, Dr. John Darrington, Yazoo City, Miss.; vice-presidents, Drs. William D. McCalipp, Yazoo City, Miss., Edward C. McDaniel, Tyronza, Ark., and Hiram B. Everett, Memphis, Tenn.; secretary, Dr. James L. Andrews, Memphis (reelected), and treasurer, Dr. James A. Vaughn, Memphis (reelected). Memphis was selected as the next place of meeting.

**Ohio Valley Physicians Meet.**—At the fifteenth annual meeting of the Ohio Valley Medical Association held in Evansville November 5 and 6, the following officers were elected: president, Dr. Argus D. Willmoth, Louisville; vice presidents, Dr. E. Otis Smith, Cincinnati, George M. Young, Evansville, and Dr. Joseph Rilus Eastman, Indianapolis, and secretary-treasurer, Dr. Benjamin L. W. Floyd, Evansville (reelected). It was decided to hold the 1914 meeting in Evansville.

**Colored Physicians Hold Meeting.**—At the annual meeting of the National Medical Association held in Nashville recently the following officers were elected: president, Dr. Arthur M.

Brown, Birmingham, Ala.; vice-presidents, J. M. G. Ramsey, Richmond, Va., and E. J. LeBranch, New Orleans; secretary, Dr. Walter G. Alexander, Orange, N. J., and treasurer, Dr. J. R. Levy, Florence, S. C. Raleigh, N. C., was selected as the place of meeting for 1914.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Michael Reese Hospital, Chicago, $20,000; Children's Memorial Hospital and Chicago Home for Convalescent Women, each $10,000; St. Luke's, Wesley, Mercy, Presbyterian, German, Englewood and Chicago Lying-in Hospitals, Chicago Visiting Nurses' Association and Home for Destitute Crippled Children, each $5,000, by the will of Edward Morris.

West Jersey Homeopathic Hospital, Camden, $11,000 by the will of the late Catherine C. Warner.

**Mission Board Asks Donations of Medical Equipment.**—The American Board of Commissioners for Foreign Missions has issued an appeal for surgical instruments of all practical kinds and in good condition, microscopes, sterilizers, etc., which are needed in the medical missions supported by the board in foreign countries. Any such instruments should be sent by parcels post to John G. Hosmer, 14 Beacon Street, Boston, Mass.

**Sanatorium Heads to Meet.**—The American Sanatorium Association will hold its ninth mid-winter meeting December 6 and 7, at the City of New York Tuberculosis Sanatorium, Otisville, as the guest of the Department of Health of New York, under the presidency of Dr. Vincent Y. Bowditch, Boston. The program includes the following important papers: "Some Desirable Features of a Large Municipal Sanatorium," by Herman M. Biggs, New York City; "Gastro-Intestinal Complications of Tuberculosis," by Dr. Charles W. Mills, Loomis, N. Y., and "Occupations for Afebrile Tuberculous Patients," by Dr. S. A. Knopf, New York City.

**Quarantine Regulations for Panama Canal.**—Orders have been issued by Colonel Goethals, promulgating the executive order of the President for the administration of the maritime quarantine regulations, to go into effect with the opening of the Panama Canal. These regulations apply to the entire Canal Zone. The bill of health that must be filled out and certified to by the masters of all vessels entering the canal, requires not only a complete description of the vessel, but a certificate as to the source of its food and water supplies, the sanitary history of the officers and crew and of the passengers, the sanitary history of the cargo and effects of those on board, the sanitary condition of the ship and a certification that none on board is ill of or has been exposed within two weeks to yellow fever, cholera, cholerine, small-pox, typhus fever, plague or leprosy.

## FOREIGN

**Medical Inspection of Schools in Belgium.**—The *Gazette Méd. Belge* of October 30 states that legislation is now pending to provide for medical inspection of all schools, public and private, the expense to be borne by the community. The organized profession asks for payment at the rate of 40 cents (2 francs) per pupil, but the question of remuneration has not yet been reached.

**Practicing Woman Physician in Berlin Receives Title of Professor.**—Dr. Rahel Hirsch, a woman physician in the great Charité Hospital of Berlin, has received the title of professor. This is the first time the title has been bestowed on a practicing woman physician in Germany. Besides Dr. Hirsch, there are only three women professors in Germany; one is professor of philosophy at Bonn and one in the State Musical College. The third is Prof. Lydia Rabinowitsch of Berlin, formerly assistant to Robert Koch. The work of Dr. Hirsch has been published mainly in the *Handbuch der Biochem.* and the *Charité-Ann.* and has dealt with the thyroid and internal secretions and the diseases connected therewith, over thirteen important articles having appeared since 1905. She has been at the Charité since her graduation in 1903, and is now 43 years old.

**Latin-American Medical Congress.**—The fifth international gathering of physicians from the various Latin-American countries was held at Lima, Peru, the first two weeks in November, with a large attendance. This meeting was at the same time the Sixth Pan-American Medical Congress. The invitation to hold the next meeting in Cuba was accepted. The special feature of the congress was the proof presented that the uta of Peru is due to a species of Leishmania. A report on the research leading up to this was published in THE JOURNAL, Nov. 8, 1913, p. 1713. *The Cronica Medica* of Lima, in honor of the congress, published a long historical review of medicine in Peru from the earliest Spanish invasion to the present time. From it we learn that some of the soldiers of Pizarro's command became affected with a disease which answers the description of Peruvian verruga as we know it now. The university of San Marcos was founded by a decree of the king of Spain in 1551, and the first hospital was founded in the same year. Regulations were passed in 1559 restricting the practice of medicine and surgery to men with proper credentials from Spain and two medical chairs were founded in 1635. The records state that rabies was not known in Peru before 1807.

**Dr. Grenfell's Work in Newfoundland and Labrador.**—Dr. Grenfell reached St. Johns, N. F., early in October, after a strenuous summer in the northern parts of Labrador. At a meeting at Government House the proposal was made and will be acted on to bind the various associations connected with his work in Newfoundland and Labrador into one common deed of incorporation, with a council of direction representing all. This shall bear the name of the International Grenfell Association and consist of two representatives from Newfoundland, two from New York, two from Boston and two from Canada. It is to meet in St. Johns each year in July and be responsible for the administration and financing of the whole work. Dr. Grenfell gave a summary of the work done in Newfoundland and in Labrador. He said that a hospital was maintained at St. Anthony at a cost of $25,000 a year, to which the Colonial government granted $1,500 yearly. From the first of January of the present year to the end of September there had been 3,160 out-patients and 352 in-patients, in charge of one surgeon and two nurses, with an eye and ear specialist and a dentist. At Forteau, at the end of Belle Isle Strait, on the boundary of the section of Labrador owned by Canada and Newfoundland, there is a small station with a nurse in charge but a medical man will locate there for the winter. This will be a great benefit to the people, as there are numerous small settlements every few miles. There is another hospital further west on the shore of the Gulf of St. Lawrence at Harrington. This is in Canadian territory and the Canadian Association care for it entirely. It is the only place from Quebec to Battle Harbor, a seaboard of several hundred miles, where a doctor resides, and he has calls at times from points hundreds of miles distant. In addition to these hospitals, Dr. Grenfell does an enormous amount of work himself on the hospital-ship *Strathcona* which has now been in service for thirteen years, and which was presented to the mission by Lord Strathcona. This attends to the requirements of 25,000 people on 1,200 fishing boats during five months of the year. At Battle Harbor on the Labrador coast is a hospital which costs annually $6,000. Two doctors and two assistants and four nurses are maintained there. At Indian Harbor, midway up the coast toward Hudson Strait, is still another hospital which costs $4,000 annually for maintenance, with a doctor and assistant and two nurses. The medical men at these hospitals are volunteers.

## CANADA

**Army Medical School.**—An army medical school has been established at Ottawa in connection with the Central Laboratory of Hygiene. Military medical officers will be trained in laboratory work and army sanitation.

**Proposed Amendment to Medical Act.**—The government of Alberta is considering an amendment to the medical act of that province in order to induce physicians to locate in the more thinly settled portions thereof. By it any medical men entering the province who are qualified to take the prescribed examinations will be granted an interim license, providing they are prepared to locate at least twenty miles from the nearest physician. When the examinations arrive, if candidates fail in one or more subjects they will have this interim license extended for six months in order to prepare for the subjects they failed to pass on.

**Hospital News.**—The ratepayers of Winnipeg recently refused to grant $275,000 for the purposes of the Winnipeg General Hospital. As less than three thousand persons voted out of a possible eighteen thousand the by-law will be resubmitted at the annual municipal elections in December.——Glace Bay, Cape Breton, is to have a new hospital at a cost of $80,000.——Fredericton, N. B., will enlarge Victoria Hospital.——Plans have been prepared for a tuberculosis hospital at St. John, N. B.——Walkerville, Ont., will erect a new hospital of fifty beds.——To complete the new Notre Dame Hospital in Montreal $750,000 is required.

**University News.**—Dr. John Stewart has been appointed professor of surgery in the Halifax Medical College, succeeding Dr. Norman McKay, resigned. In connection with this medical school the provincial government of Nova Scotia has just completed a new pathologic building; and a new building for the departments of chemistry and physics of Dalhousie University is being erected.——The Western University, London, Ont., requires a head for its physiological department. Dr. Paul S. McKibbin, for several years teacher in the Department of Anatomy in the University of Chicago, has been appointed professor of anatomy there.——The faculty of Queen's University, Kingston, has established three teaching fellowships, in anatomy, pathology and physiology.——At McGill University, Montreal, Dr. A. C. Geddes has succeeded Dr. Francis J. Shepherd as professor of anatomy. On account of the death of Dr. N. H. Alcock the department of physiology is without a head but the work is being carried on by the first assistant, Dr. Miller.

**Personal.**—Dr. Orton I. Grain, Selkirk, Man., member of the Manitoba Legislature, has resigned his seat in favor of the Hon. Dr. W. H. Montague of Winnipeg, who has been selected for minister of public works in the government of Manitoba. Dr. Grain has been appointed superintendent of Manitoba Indian Reserves.——Dr. Alexander J. Macauley has been appointed medical officer of health of Brockville, Ont.——Dr. Zephyr Rheaume has been appointed to the chair of experimental surgery just created at Laval University, Montreal.——Drs. Robert J. Blanchard and John S. Gray of Winnipeg were recently tendered a complimentary dinner by the medical staff of the general hospital of that city. Both medical men are retiring from active service after serving for a quarter of a century. Dr. James R. Jones presented Dr. Gray with a silver tea service and Dr. James W. Good made a presentation to Dr. Blanchard of a gold watch. Dr. Gray has been registrar of the College of Physicians and Surgeons for many years and Dr. Blanchard was president of the Canadian Medical Association in 1909. Dr. Gordon Bell presided at the function.

## LONDON LETTER

*(From Our Regular Correspondent)*

London, Nov. 1, 1913.

### A Tragedy of the Panel

An unfortunate event has occurred at the town of Wisbech in connection with the working of the insurance act. All the local physicians except two refused to work the act, and as two were not sufficient for the number of the insured persons a physician was imported for the purpose. This was resented by the local profession, who refused to meet him in consultation and boycotted him in every way. Feeling ran so high that he received three hundred anonymous abusive letters and post-cards, fifty on the day he arrived. His brass plate was repeatedly pulled down and defaced. He was repeatedly called on the telephone at night to distant cases which did not exist. But he became very popular with his patients and his practice became so large that he was overworked. Matters came to a crisis when at the instance of the president of the local branch of the British Medical Association he was arrested on the charge of criminal libel for sending an anonymous post-card. He emphatically denied the charge and bail was given. A few days later he did not get up at the usual hour and was found in his bed comatose. He died, evidently from narcotic poisoning; but whether he took the drug with suicidal intent or merely as a soporific has not yet been revealed. Public feeling in the town was aroused to an extraordinary extent. The people regarded his death as the result of persecution by the other physicians. A mass indignation meeting was held and after this crowds of workmen marched in procession to the house of the president of the local branch of the British Medical Association yelling and threatening violence if he showed his face. Stones were thrown at the windows and doors with destructive effect, and as each one crashed through the glass shouts of delight went up. After smashing all the windows and the front door the crowd marched to the house of another physician and smashed his windows. Extra police have had to be drafted into the town. Later a second attack was made on the house of the president, who telephoned for assistance from the police of the neighboring towns. All the time considerable damage was being done to his furniture. A daring attempt was made to rush his front door, which was barricaded, and shouts of "help him out! help him out!" came from the crowd. At this juncture the mayor arrived and attempted to read the riot act, but the attitude of the crowd was so threatening that he had to depart. Not until police reenforcements arrived could order be restored. The latest news is that the president has left the town for an unknown destination.

### The Falling Birth-Rate

An organization termed the National Council of Public Morals has appointed a birth-rate commission to report on the declining birth-rate. The chairman of the commission is Bishop Boyd Carpenter, and the members are composed of well-known clergymen, physicians and social workers. The inquiry is to be made in four directions: First, the extent and character of the decline are to be considered under such headings as the present British birth-rate and infantile mortality, general and classified according to income, occupation, province and county, urban and rural, and religion (if possible); statistics showing the proportion of sterile to total marriages (to find out whether smaller families or total childlessness is the cause of the fall), and foreign statistics showing the extent of declining birth-rates, special attention being paid to France and the Jews. Secondly, the alleged causes of the decline are to be investigated under the headings of physiologic causes (for example, the effect of town life, etc., on lateness of marriage, fertility and number of marriages), prudential motives and methods of restraint (moral, mechanical and chemical). Thirdly, the effects of the decline of the birth-rate, whether due to natural or to artificial causes, are to be searched out, under the headings of effects on the children, on the man and woman, on married persons and on home life. Fourthly, the economic and national aspects are to be dealt with, and the commission is to consider, for instance, the alleged results of a rapid increase of population in a country in which the land is fully cultivated, of a permanent surplus of workers on the condition of the working class (in the matter of unemployment, overcrowding, etc.) in the case of a declining or stationary population, and the alleged national danger of a disproportionate increase in other nations.

A discussion on the subject has taken place at Edinburgh under the auspices of the Scottish Council of Public Morals. Mr. James Marchant, the secretary of the National Council of Public Morals, read a paper. Among the explanations suggested by him for the fall in the birth-rate were the high standard of living, the love of pleasure and the higher education of women. A serious question was whether or not behind the lower birth-rate there was a lower degree of fertility. If if could be proved that only the weak and defective were ceasing to increase, there would be little cause for complaint; but apparently the fall ran through all classes. Dr. J. W. Ballantyne opened the discussion. A tremendous change had occurred, he said, in the vital statistics in the country, which was represented by the fall of the birth-rate from 35 to 25 per thousand. There was no doubt that the human race had begun to experiment on its reproduction, very much as it had in the past experimented on its digestion, and no one could foretell the ultimate result; but one immediate and welcome result had been the appreciation in the value of infant life which had followed the decrease in the number born. By this he thought it was possible to maintain an equilibrium so far as the number of lives in the nation was concerned.

### A Color Problem in India

Some time ago it was stated in a letter to The Journal that the government was adopting a new policy with regard to medical practice in India. Almost all the important civil medical appointments were held by the superior officers of the medical corps of the Indian Army, who are white men. It has been decided to throw these appointments open to the civil practitioners of India, who are mostly natives. This policy is now criticized by a society termed the European Defense Association, which has addressed a memorandum to the government on the subject. They point out that the European officials scattered all over India are seriously affected by the change. Hitherto they have been able to obtain skilled European medical aid for themselves, their wives and their families. The objection of European women to native medical attendants is well known. Moreover, the medical qualifications of the native physicians, at present at any rate, are of a lower kind than those of the European physicians.

## PARIS LETTER

*(From Our Regular Correspondent)*

Paris, Nov. 7, 1913.

### Death of Professor Jaboulay

A terrible railroad accident has occurred at Melun near Paris. Dr. Jaboulay, professor of clinical surgery at the Faculté de médecine de Lyon, was in one of two trains which crashed together. No news has been received from him, and all the evidence seems to indicate that his remains are among the débris which covers the scene of the catastrophe. Dr. Patel has been commissioned by the dean and professors of the Faculté de médecine de Lyon to search for and identify Dr. Jaboulay's body. Dr. Jaboulay was born in Saint Genis-Laval, July 3, 1860, and was appointed professor of clinical surgery in 1902.

### Prof. Charles Richet Recipient of the Nobel Prize

The Nobel prize for 1913 for medical science has been awarded to Dr. Charles Richet, professor of physiology at the Faculté de Médecine de Paris. He is the son of the celebrated surgeon, Alfred Richet, and was born in 1850. In 1887 he succeeded Béclard in the chair of physiology. Among his works the most notable is the discovery of anaphylaxis, for which the recent International Medical Congress at London awarded him the prize of Moscow. Professor Richet will probably be a candidate for the vacant seat in the Académie des Sciences left vacant in the section of medicine by the death of Dr. Lucas-Championnière.

## BERLIN LETTER

*(From Our Regular Correspondent)*

Berlin, Oct. 31, 1913.

### Personal

Professor Steyrer of Greifswald has been appointed director of the medical clinic at Innsbruck.

### Kaiser Wilhelm Institute for Experimental Therapy

October 28 the Kaiser Wilhelm Institute, which was founded by the kaiser and is to be conducted under his protection, was opened in the presence of the royal family. The state provided the ground, and the Kaiser Wilhelm fund the material for the building. The cost of the institute was about 500,000 marks ($125,000). In the main building is the serologic department, which is conducted by the director of the institute, Professor Wassermann, and the department of chemistry, headed by Professor Neuberg, formerly assistant of Professor Salkowski. There is a room for dangerous explosives and also a special room for a large centrifuge are in the basement. The lid of the centrifuge is of glass in order that should there be a break in the centrifuge the pieces may easily be thrown outside. A separate department is available in which animals may be observed as to their health before use. This building is available for large animals such as horses and cows. Besides this there is a larger building of two stories in which are conducted experiments on animals. In front of the animal stables there are exercising-yards for the animals separate from the stables mentioned, and in another department are a kitchen for preparing food, a room for drawing blood from horses in order to obtain serum, and two complete aseptic operating-rooms for larger animals.

# *Marriages*

Randolph Macon Grimm, M. D., U. S. P. H. S., Savannah, Ga., to Miss Heloise Percifull of Nesting, Va., November 5.

Joseph Redmond Condon, M.D., Des Moines, Ia., to Miss Margaret Lauretta Byrne of Chicago, November 12.

Joseph Abel Thibodeau, M.D., Madison, Me., to Miss Arthemese Gauthier of Rumford, Me., November 2.

Olive Violet Brasier, M.D., Butte, Mont., and Harney M. Cardua of Washington, D. C., November 2.

Reuben Spencer Simpson, M.D., to Miss Tusanelda Nusbickel, both of Lyons, N. Y., November 4.

Ira David Baxter, M.D., Spencerville, Ohio, to Miss Sue Wager of Delphos, Ohio, November 4.

James Augustus Longo, M.D., to Miss Josephine McMahon, both of Sheppton, Pa., November 5.

Oscar Cleff, M.D., Chicago, to Miss Zolier Jacqueline Parsons of Mansfield, La., Nevember 5.

Robert H. Townsley, M.D., Wagner, S. Dak., to Miss Maude E. Beverly of Sioux City, Ia.

Urial McReynolds, M.D., to Miss Ruby Murphy, both of Knox City, Mo., October 30.

Gilbert H. Wynekoop, M.D., to Miss Lucile Megahan, both of Chicago, November 20.

Edward James Monahan, M.D., Revere, Mass., to Miss Anna Olive Thompson, of Prince Edward Island, at Milton, Mass., November 11.

# *Deaths*

**Ira Kilbourn Gardner, M.D.** University of Michigan, Ann Arbor, 1870; a Fellow of the American Medical Association; vice-president of the National Association of Railway Surgeons; chairman of the Board of Councilors of the Iowa State Medical Society, and secretary-treasurer of the Chickasaw County Medical Society; local surgeon of the St. Paul system at New Hampton, Ia.; president of the Board of Education; died at his home in New Hampton, November 4, from cerebral hemorrhage, aged 67.

**Alfred J. Pedlar, M.D.** Cooper Medical College, San Francisco, 1877; in 1877 chairman of the Board of City Trustees and physician of Fresno County, and a member of the City Board of Health; for several years acting assistant surgeon U. S. Army with service during the Spanish-American War as post surgeon at the Presidio of San Francisco; from 1877 to 1907 a practitioner of Fresno and for two terms state senator; died at his home in Alameda, Cal., from asthma, aged 59.

**Thomas Wistar, M.D.** University of Pennsylvania, Philadelphia, 1859; for thirty-nine years chief medical inspector and medical director of the Provident Life and Trust Company, Philadelphia; for several years secretary of the Philadelphia Dispensary; a member of the staff of the Wills Eye Hospital, and a director of the Wistar Institute of Anatomy; died at his home in Philadelphia, September 27, from heart disease, aged 77.

**John Erskine Taylor, M.D.** Medical College of Philadelphia, 1890; a Fellow of the American Medical Association; formerly president of the Venango County (Pa.) Medical Society; a member of the American Association for the Advancement of Science, the American Association of Life Insurance Examining Surgeons, and the Oil City Medical Club; died at his home in Nickelville, October 30, from pulmonary tuberculosis, aged 53.

**Henry W. Nelson, M.D.** Homeopathic Hospital College, Cleveland, Ohio, 1865; College of Physicians and Surgeons, Keokuk, Ia., 1876; Jefferson Medical College, 1880; at one time secretary of the Jefferson County (Ohio) Medical Society; for nearly fifty years a practitioner of Steubenville; died at the home of his daughter in Milwaukee, September 25, from the effects of an overdose of morphin, aged 76.

**Richard French Stone, M.D.** University of Pennsylvania, Philadelphia, 1865; formerly surgeon general of Indiana National Guard, professor of materia medica, therapeutics and clinical medicine in the Central College of Physicians and Surgeons, Indianapolis, and president of the Marion County Medical Society; died in his office in Irvington, Indianapolis, October 3, from accidental gas asphyxiation, aged 69.

**Aria Louis Derdiger, M.D.** College of Physicians and Surgeons, Chicago, 1903; a Fellow of the American Medical Association; assistant in bacteriology in his alma mater; professor of psychiatry and ophthalmology in the Chicago College of Medicine and Surgery; president of the Chicago Eye, Ear, Nose, and Throat Infirmary; died at his home in Chicago, November 12, aged 47.

**Walter J. Pennell, M.D.** University of Vermont, Burlington, 1891; a Fellow of the American Medical Association and a specialist on diseases of the eye, ear, nose and throat; ophthalmic and aural surgeon to the Central Maine General Hospital; oculist and aurist to Bates College; died at his home in Auburn, October 29, from cerebral hemorrhage, aged 50.

**James Seaton Wise, M.D.** Medical College of Ohio, Cincinnati, 1863; L. F. P. S. Glasgow, and L. R. C. P. Edinburgh, 1868; a Confederate veteran; for several years a surgeon on transatlantic steamers; for two terms coroner of Kenton County, Kentucky; died in his home in Covington, October 12, from cerebral hemorrhage, aged 72.

**John Sidney Warren, M.D.** Jefferson Medical College, 1866; assistant surgeon of the Eighth U. S. Colored Horse Artillery during the Civil War; of New York City; a member of the New York Academy of Medicine, and for fifteen years treasurer of the New York County Medical Society; died in Atlantic City, N. J., July 18, aged 72.

**Joseph William Posthauer, M.D.** College of Physicians and Surgeons, New York City, 1895; of Boston; formerly associate professor of physiology in Milwaukee Medical College; for many years a practitioner of Boston and later of Auburndale, Mass.; died at his home in Burlington, Vt., September 22, from pleurisy, aged 40.

**Edward H. Higbee, M.D.** Missouri Medical College, St. Louis, 1884; a member of the Illinois Medical Society; one of the founders of the Polyclinic Hospital, St. Louis; surgeon for the Chicago and Alton Railroad at Roodhouse, Ill., and alderman for several years; died at his home, November 3, from pneumonia, aged 66.

**William Theodore Wenzel, M.D.** Cooper Medical College, San Francisco, 1876; one of the founders of the San Francisco College of Pharmacy and professor of chemistry for many years; chemist to the United States Appraisers' Stores, San Francisco for fourteen years; died at his home in that city, July 31, aged 84.

**Joseph D. Crum, M.D.** Eclectic Medical Institute, Cincinnati, 1881; a member of the Michigan State Medical Society; for thirty years a practitioner of Owosso, Mich., and for several terms a member of the board of education; died at the home of his son in Kalamazoo, November 1, from nephritis, aged 60.

**Amy Hamm Brush Clark, M.D.** Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1884; a member of the Medical Society of the State of Pennsylvania; a member of the staff of the Samaritan Hospital; died at her home in Philadelphia, November 4, aged 54.

**Joseph Augustus Stites, M.D.** Bellevue Hospital Medical College, 1875; for nine years surgeon of the Netherlands American Steam Navigation Company, and later health officer and medical inspector in Springfield, N. J.; died in his home in that place, October 23, from cerebral hemorrhage, aged 61.

**James D. Van Derveer, M.D.** College of Physicians and Surgeons, New York City, 1866; for several years commissioner of deeds at North Branch, N. J., and prior to that time a practitioner of Liberty Corner, N. J.; died at his home in North Branch, July 29, from heart disease, aged 75.

**George W. Jenkins, M.D.** New York University, New York City, 1851; a member of the State Medical Society of Wisconsin; for many years local surgeon of the Chicago, Milwaukee and St. Paul Railway at Kilbourn, Wis.; died at his home, November 3, from senile debility, aged 89.

**Alexis Marcy Leon, M.D.** College of Physicians and Surgeons, New York City, 1878; a Fellow of the American Medical Association; visiting physician to St. Francis' Hospital, New York City; died suddenly at his home in New York City, November 2, from heart disease, aged 56.

**Orbun T. Moore, M.D.** Washington University, St. Louis, 1875; for many years a practitioner of St. Louis and formerly chief diagnostician of the St. Louis Board of Health, who recently moved to Augusta, Mo.; died in St. Charles, Mo., October 22, from heart disease, aged 64.

**Arthur F. Niedermeier, M.D.** University of Pennsylvania, Philadelphia, 1900; chief medical examiner and surgeon at the Pennsylvania Railroad Terminal, New York City; died in Mercer Hospital, Trenton, N. J., October 23, from septicemia due to an operation wound, aged 37.

**Robert Henry Reynolds, M.D.**, Eclectic Medical Institute Cincinnati, 1872; for forty years a practitioner of Huron County, Ohio; died at his home in Greenwich, September 20, from cerebral hemorrhage, aged 67.

**Henry Nathan Longfellow, M.D.** Harvard Medical School, 1904; a Fellow of the American Medical Association, and a member of the dermatological staff of Mt. Sinai Hospital, Boston; died at his old home in Georgetown, Mass., October 31, from Hodgkin's disease, aged 42.

**Mordecai M. McDowell, M.D.** Hospital College of Medicine, Louisville, Ky., 1878; a member of the Indiana State Medical Association; at one time sheriff of Knox County, Ind., and a member of the state senate; died at his home in Vincennes, November 9, aged 68.

**William A. Holloway, M.D.** University of Alabama, Mobile, 1889; a Fellow of the American Medical Association and an esteemed practitioner of Goodwater, Ala.; was assaulted November 4 and died at his home a few hours later, aged 46.

**William H. Schenk, M.D.** New York University, New York City, 1848; for many years a practitioner of Australia and later of his native place, Flemington, N. J.; died September 27, aged 87, in the house in which he was born.

**G. A. Niedermeyer, M.D.** Medical College of Ohio, Cincinnati, 1861; assistant surgeon of the Twenty-Seventh Colored U. S. Volunteer Infantry during the Civil War; died at his home in Cincinnati, October 20, aged 76.

**Ray McKennedy Van Cleave, M.D.** Indiana University School of Medicine, 1911; of Muncie, Ind.; was found dead in a hotel in Terre Haute, Ind., September 7, from the effects of poison believed to have been self-administered with suicidal intent, aged 28.

**Samuel Matthew Crawford Howell, M.D.** Atlanta, (Ga.) Medical College, 1891; a Fellow of the American Medical Association; president of the First National Bank of Midland City, Ala.; died at his home, October 30, from cerebral hemorrhage, aged 44.

**William Wright Markoe, M.D.** Yale University, New Haven, Conn., 1898; a Fellow of the American Medical Association; acting assistant surgeon U. S. P. H. S., with recent station at Ft. Stanton, N. Mex.; died in Charleston, N. H., October 19, aged 39.

**David R. Springsteen** (license, Iowa, years of practice, 1886); a veteran of the Civil War, and for more than thirty years a practitioner of Weldon and Decatur City; died at his home in the latter place, September 23, from heart disease, aged 69.

**Samuel Adams Robinson, M.D.** Homeopathic Hospital College, Cleveland, 1858; formerly of New York and Portland, Ore.; well known as a public welfare worker; died in his apartment in Washington, D. C., October 9, from heart disease, aged 75.

**August Schumacher, M.D.** Medical College of Ohio, Cincinnati, Ohio, 1897, once health officer of Hamilton, Ohio, and for four years coroner of Butler County; died at his home in Hamilton, October 16, from aneurysm of the aorta, aged 39.

**Lindsay P. O'Neal, M.D.** Washington University, Baltimore, Md., 1865; surgeon of volunteers during the Civil War; for several terms a member of the common council of Mechanicsburg, Pa.; died at his home, September 18, aged 74.

**Samuel Miller Mosgrove, M.D.** Miami Medical College, Cincinnati, 1872; Bellevue Hospital Medical College, 1873; formerly a member of the Ohio State Senate; died at his home in Urbana, October 22, aged 62.

**N. H. Palmer, M.D.** University of Arkansas, Little Rock, 1911; formerly of Crossett and Portland, Ark.; died in Delta, Colo., September 20, from tuberculosis of the lungs, aged 31.

**Absalom Pearson, M.D.** Cincinnati College of Medicine and Surgery, 1880; health officer of New Weston, Ohio; died at his home, August 6, from pulmonary hemorrhage, aged 75.

**DeWitt H. Thomas, M.D.** University of Tennessee, Nashville, 1887; local surgeon for the Illinois Central Railroad at Sturgis, Miss.; died at his home in that place, October 11.

**John Nelson Merrill, M.D.** University of Michigan, Ann Arbor, 1869; a member of the Maine Medical Association; died at his home in Skowhegan, October 2, aged 71.

**James H. Snowden** (license, Arkansas, 1903); for many years an eclectic practitioner of Conway County; died at his home in Center Ridge, September 30, aged 65.

**Philip D. Reefy, M.D.** Eclectic Medical Institute, Cincinnati, 1869; Western Reserve University, Cleveland, 1871; died at his home in Elyria, Ohio, October 7, aged 69.

**Andrew W. Meyers, M.D.** University of Tennessee, Nashville, 1885; died at his home in Scottsville, Ky., October 13, from typhoid fever, aged 57.

**Dennis M. Smith, M.D.** Albany (N. Y.) Medical College, 1888; examiner in lunacy; died at his home in Cambridge, N. Y., October 5, aged 66.

**Frank A. Nevers, M.D.** Missouri Medical College, St. Louis, 1874; died at his home in Houlton, Me., August 3, from arteriosclerosis, aged 63.

**William Harvey Kincaid, M.D.** Memphis Hospital College, 1900; died at his home in McKinney, Tex., September 17, from typhoid fever, aged 37.

**Thomas W. Moore, M.D.** Tulane University, New Orleans, 1894; died in his office in Lagrange, Tex., September 28, from heart disease, aged 42.

**Charles H. Shadle, M.D.** University of Pennsylvania, Philadelphia, 1894; of Templeton, Pa.; died in Springboro, from pneumonia, aged 44.

**Edward Arthur Wheaton, M.D.** Ohio Wesleyan University, Cleveland, 1897; died at his home in Mansfield, Ohio, September 25, aged 48.

**Omar E. Newman, M.D.** Western Reserve University, Cleveland, 1878; died at his home in Penn Yan, N. Y., October 7, aged 58.

**Arthur D. Raines, M.D.** St. Louis College of Physicians and Surgeons, 1898; died in his office in St. Louis from a gunshot wound of the head, self-inflicted, it is believed with suicidal intent, September 29, aged 38.

**John M. Rader, M.D.** St. Louis College of Physicians and Surgeons, 1893; formerly deputy coroner of St. Louis County; died at his home in St. Louis, October 22, from cerebral hemorrhage, aged 55.

**Nathan J. Saunders, M.D.** College of Physicians and Surgeons, Kansas City, Kan., 1890; a Fellow of the American Medical Association; died at his home in Glen Elder, Kan., October 25, aged 52.

**Ray DeWitt Robinson, M.D.** Cleveland Homeopathic Medical College, 1903; of Akron, Ohio; died in Grace Hospital, Cleveland, October 7, two days after an operation for appendicitis, aged 44.

**Harry Luther Towner, M.D.** Chicago Homeopathic Medical College, 1879; for many years a practitioner of Sayre, Pa.; died at the home of his daughter in New York City, October 5, aged 63.

**Robert Wadsworth, M.D.** Hahnemann Medical College, Philadelphia, 1876; of Rochester, N. Y.; while making a professional call in that city October 17, died from angina pectoris, aged 63.

**T. F. Wynn, M.D.** Memphis Hospital Medical College, 1893; of Denison, Tex.; died in that city, July 20, two months after a fall in which he struck his head on a cattle-guard, aged 51.

**L. V. White, M.D.** Southern Medical College, Atlanta, 1886; for more than twenty years a practitioner of Brewster County, Texas; died at his home in Marathon, September 29.

**Henry Westerman** (license, Minnesota, 1887); for more than half a century a practitioner; died at his home in Mankato, October 14, from disease of the stomach, aged 86.

**James White, M.D.** University of Toronto, Ont., 1875; first president of the Hamilton Medical Association; died at his home in Hamilton, Ont., August 17, aged 55.

**Stephen G. Warren, M.D.** Cleveland University of Medicine and Surgery, 1865; died at his home in Attica, N. Y., October 17, from cerebral hemorrhage, aged 73.

**William B. Zineman, M.D.** Baltimore University, 1896; a well-known optician of Philadelphia; died at his home October 15, after a long illness, aged 49.

**George Victor Winter, M.D.** Northwestern University Medical School, Chicago, 1911; of Albany, Minn.; died in St. Paul, July 25, from appendicitis, aged 33.

**William W. Watkins, M.D.** Tulane University, New Orleans, 1872; a wealthy banker and planter of Aberdeen, Miss.; died at his home, September 30, aged 63.

**J. M. Condon, M.D.** Medical College of Ohio, Cincinnati, 1881; of Scranton, Pa.; died in the Scranton State Hospital, September 14, aged 56.

**John Savage Wade, M.D.** University of Nashville, Tenn., 1878; died at his home in Weston, Tex.; August 7, from locomotor ataxia, aged 65.

**Edward Everett Gilbert, M.D.** University of Louisville, Ky., 1886; of Haskell, Tex.; died about October 8, from cerebral hemorrhage, aged 53.

**George Batchelder Langmaid, M.D.** Boston University School of Medicine, 1877; died at his home in East Greenwich, R. I., September 14, aged 65.

**Lucian Beauregard Horton, M.D.** Louisville (Ky.) Medical College, 1890; died at his home in Gate City, Va., September 26, aged 52.

**Frederick R. W. Warren, M.D.** Queen's University, Kingston, Ont., 1905; of Assiniboia, Sask., died September 1, aged 36.

**Aaron Mason Larkin, M.D.** University of Vermont, Burlington, 1868; died at his home in Norwood, N. Y., August 21, aged 71.

**Alfred Helton** (license, years of practice, Indiana, 1902); died at his home in Paynetown, August 7, from heart disease, aged 62.

**Robert M. McGary, M.D.** Jefferson Medical College, 1884; died suddenly at his home in Mechanicsburg, Pa., September 1.

**Robert C. Mayes, M.D.** University of Louisville, Ky., 1872; died at his home in Brownwood, Tex., October 19, aged 76.

**William L. Garratt** (license, years of practice, Michigan, 1900); died at his home in Watervliet, October 10.

# The Propaganda for Reform

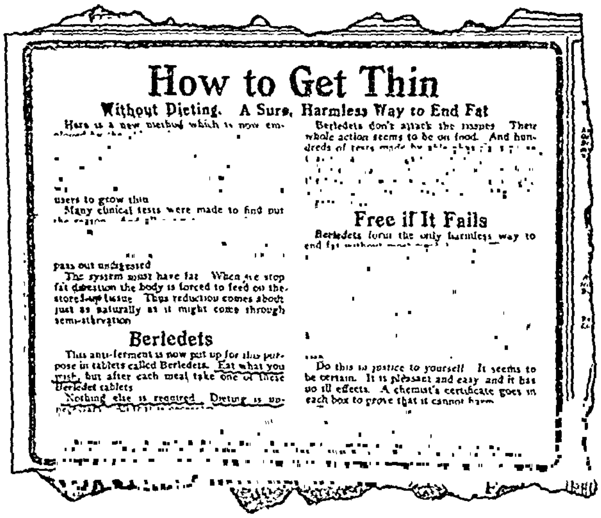
In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

## BERLEDETS

### Another Fraudulent and Dangerous Obesity Cure

So long as many well-to-do women continue to eat much and exercise little, so long will they be likely to become obese. So long, also, as the present style in women's fashions calls for the svelt figure, so long will the exploiters of fraudulent "obesity cures" become rich. Every "fat cure" of this type emphasizes in its advertisements two things: first, that those who use it need not diet; second, that they need not exercise. Berledet tablets are one of the latest fake cures for obesity, and they run true to form in that they are sold under the claim that neither dieting nor exercise is necessary to reduce weight when Berledets are used.

Several inquiries have been received regarding the product; one, in particular, came from a layman of more than average intelligence, who complained that his wife after taking this stuff had become seriously ill and had to be put under a physician's care. Here are some of the advertised claims:



How to Get Thin

Without Dieting. A Sure, Harmless Way to End Fat

Here is a new method which is now em-

users to grow thin

Many clinical tests were made to find out

pass out undigested

The system must have fat. When we stop fat digestion the body is forced to feed on the stored-up tissue. Thus reduction comes about just as naturally as it might come through semi-starvation.

Berledets

This anti-ferment is now put up for this purpose in tablets called Berledets. Eat what you wish, but after each meal take one of these Berledet tablets.

Nothing else is required. Dieting is un-

Berledets don't attack the tissues. Their whole action seems to be on food. And hundreds of tests made by able

Free if It Fails

Berledets form the only harmless way to end fat without

Do this in justice to yourself. It seems to be certain. It is pleasant and easy and it has no ill effects. A chemist's certificate goes in each box to prove that it cannot harm.

A typical Berledets advertisement.

> "Eat what you wish, but after each meal take one of these Berledet tablets. Nothing else is required. Dieting is unnecessary."
>
> "*Berledets form the only harmless way to end fat without the most rigid dieting.*"
>
> "A chemist's certificate comes in each box to prove that it cannot harm."
>
> "In our estimation, this discovery has settled forever the problem of obesity."

Like every fraudulent obesity cure, the claims made for the stuff before you purchase it differ from those made in the instructions that come with the dollar package. While the advertisement specifically states that Berledets will make you thin "without dieting," the instructions with the preparation urge:

> "Moderation in the use of fat-forming food."
>
> "Eat sparingly of rich gravies, pastries, butter and fresh breads. Also of fried foods."

While, too, the newspaper advertisements intimate that no exercise is necessary to reduce obesity if Berledets are used—"nothing else is required"—yet, *after the dollar has been paid*, the purchaser finds that it is necessary to:

> "Exercise freely in the open air."

The chemist's report referred to in the advertising matter sent out with the package, reads as follows:

## VEROFORM GERMICIDE OMITTED FROM N. N. R.

### Report of the Council on Pharmacy and Chemistry

Veroform Germicide is described in New and Nonofficial Remedies, 1913, as a solution produced by dissolving formaldehyd gas in a solution of soap. It is claimed to contain 20 per cent. of formaldehyd. The claimed germicidal action of this preparation appearing improbable in the light of the investigations of disinfectants made by the Hygienic Laboratory of the U. S. Public Health Service, the owners of Veroform Germicide were asked to substantiate their claims. Such evidence not having been produced, the council voted that Veroform Germicide be omitted from future editions of New and Nonofficial Remedies. The report which appears below was submitted to the manufacturer, and after some months' waiting, was authorized for publication.

W. A. Puckner, Secretary.

On October 8, 1912, the report of the Hygienic Laboratory of the United States Public Health Service on commercial disinfectants showing Veroform Germicide to have a phenol coefficient (without organic matter) of but 0.43, was called to the attention of the Veroform Hygienic Company, with the suggestion that a product which has a germicidal value less than that of phenol should probably not be called a germicide. In reply the firm wrote, on Oct. 11, 1912, that ". . . we will have an investigation made and will advise you in detail." This information has not been received and the last letter, dated Dec. 27, 1912, reminding the firm of its promise that the question in dispute would be investigated, brought no reply.

Besides the questionable claim that Veroform is a germicide the direct claim is made that, although less poisonous, "Veroform Germicide . . . has a more bactericidal effect" than carbolic acid. This claim is not substantiated by the Hygienic Laboratory, which found a coefficient of 0.43. Under the circumstances the claim for Veroform Germicide is unwarranted and in conflict with the rules of the council. It is therefore recommended that Veroform Germicide be omitted from New and Nonofficial Remedies, and that publication of this report be authorized.

# *Association News*

## THE ALLEGED DECISION AGAINST THE AMERICAN MEDICAL ASSOCIATION

There have appeared recently in the public press and in a number of medical journals interviews and letters purporting to have emanated from Dr. G. Frank Lydston, in which it is claimed that he had won a very important decision in the Appellate Court against the American Medical Association;[1] that the American Medical Association was, and has been, acting illegally for several years; that the trustees are illegally holding office and that all of the acts which have been done by the trustees are illegal. As these statements are untrue, the Board of Trustees, at its meeting Nov. 7, 1913, authorized that the facts be published for the information of those members of the Association who are not familiar with them.

As is well known, for a long time Dr. Lydston has carried on a wordy warfare against the association and its officers. We are informed that for several months prior to January, 1911, he and his attorney endeavored to induce the state's attorney of Cook County to file a petition for a mandamus against the trustees of the association, claiming that they were illegally elected. The state's attorney, after investigating the subject, decided that there was no case against the association and declined to bring the suit. The matter was then taken to the attorney-general of the state of Illinois, who likewise declined to bring the suit.

Jan. 5, 1911, he filed a petition in the Circuit Court of Cook County *against the state's attorney* of that county *praying that the latter be compelled to commence an action of mandamus against the trustees and the association.* To this petition the state's attorney filed a demurrer, which in legal effect is making an issue on the petition as filed to the effect that granting all that is stated in the petition to be true, there is yet no cause of action. No proof or evidence of any kind is offered or received on such an issue. A lengthy hearing was had on the demurrer, and the judge sustained the same and dismissed the petition. From that decision an appeal was prayed but was not perfected.

April 28, 1911, a new petition was filed *against the state's attorney*, which petition was more elaborately drawn than the first one, and again the state's attorney filed a demurrer to the same. Another lengthy hearing was had on this demurrer, and again the judge sustained the demurrer and dismissed the appeal. An appeal was perfected to the Appellate Court, which court consists of three judges sitting as a reviewing court. Arguments were made in that court, and on Oct. 9, 1913, by a divided court, the finding of the judges below was reversed by the opinion of two judges, one judge dissenting. From this decision an appeal has been prayed by the state's attorney and allowed to the Supreme Court of Illinois, where the cause is now pending.

As will be seen, the decision does not in any way affect the American Medical Association, but relates entirely to the duties of the state's attorney. Should the Supreme Court sustain the decision of the Appellate Court all it would mean would be that the state's attorney would have to bring quo warranto proceedings against the American Medical Association. Then, and not till then, would the American Medical Association be technically concerned, and not until then would the question come up as to the association's method of transacting its business. It will be seen that the statements and inferences contained in the interviews and articles above mentioned, that Dr. Lydston had won a great decision over the American Medical Association, are without foundation in fact.

There has never been the slightest doubt or question on the part of counsel but that every act of the association has been perfectly legal, and in every way in conformity with the statute of the state and decisions of the courts.

Board of Trustees of the American Medical Association,
W. T. Councilman, *Chairman*,
M. L. Harris, *Secretary*.

# *Correspondence*

### Unreliable Wassermann Reactions

*To the Editor:*—My purpose in this note is to emphasize the mistakes, sometimes wretched in their consequence, that are being made in the interpretation of the serum-complement reaction for syphilis. The occasion for it is in the following experience:

A few days ago a young woman of the best type—attractive, intelligent, educated, sensitive, virtuous—came in to me from her physician to see if she had syphilis. During her menses six weeks before she had had a confusing rash, which had recurred, and blood had been sent to a laboratory at a distance to see if the eruption could possibly be that of syphilis. A positive reaction had been reported and a diagnosis of syphilis made from the laboratory. Her physician had sent her to me because, in his own words, he could not believe it. All of the facts were against the diagnosis; there was no history and there were no symptoms of syphilis. She had an eruption which in my opinion could be definitely said not to be syphilis, and this was also the independent opinion of my associate, Dr. A. W. Stillians. I gave blood for a Wassermann to my assistant and sent some also to Dr. F.

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[1] The point at issue is whether or not a corporation organized "not for profit" comes under the law of Illinois governing joint stock corporations: specifically whether it is necessary to hold meetings in Illinois for the election of officers. The question is one that affects all similar associations, as for instance the American Pharmaceutical Association, National and Retail Druggists, several fraternal societies, etc.

G. Harris, without intimating to either of them what result I expected. Each, independently, reported a negative reaction. The woman did not have syphilis.

The bald recital of the facts gives no intimation of the tense misery of the situation. Here was a guiltless young unmarried woman—worthy to be the wife or daughter of one of the best of us—whose life seemed to her and her family to be blasted by syphilis, and who might have gone to her dying day with the conviction that she had syphilis, if her doctor had not been unwilling to accept as final a Wassermann report that had been offered as final evidence. The only way to realize the horror of such a situation is to try to imagine the patient one of the innocent women of one's own family.

This is not a unique case in my experience; I have had several of this character. I know at least two syphilophobes who are going about in constant fear lest they have syphilis, because of mistaken diagnoses of syphilis based on unreliable Wassermanns. And the sometimes appalling character of these mistakes of a positive Wassermann in the absence of syphilis impels me to call attention to them.

Undoubtedly a good many unreliable Wassermanns are being made. The greatest fault is carelessness in technic. Another source of error is old blood. Blood two days old, even when kept in an ice-box, is unreliable for the test; and much more so if it has been kept at car temperature while in transit to a distant laboratory. Finally, some careful and conscientious but overzealous workers are drawing their test so fine in order to increase its sensitiveness that their readings sometimes become unreliable.

This criticism is not directed against the Wassermann as a test. The Wassermann is all right, but it should be appreciated that it is open to error in manipulation. It is not final and unimpeachable evidence, and in improbable cases, like the one mentioned, a positive reaction should not be accepted as final unless one can be perfectly sure of the reliability of the process by which it has been obtained. The tendency to accept the result of a test as infallible is the old story of allowing too much weight to laboratory findings—as though they were above the common human frailty of error. The Wassermann reaction is but one fact in the diagnosis of syphilis. It should be confirmed by other diagnostic evidence. In the very rare absence of this, it is not too much caution to have two independent tests to check each other.

WILLIAM A. PUSEY, M.D., Chicago.

## The Paramecium as an Indicator of Pathologic Tissue Changes

*To the Editor:*—The editorial on the work of Underhill and Woodruff (THE JOURNAL, Nov. 8, 1913, p. 1720), is justified in every way. At the suggestion of Herbert Spencer Jennings of Johns Hopkins and under his guidance, about a year ago I began an investigation of the sudden development of epidemics among paramecia. Every now and again a race of *Paramecium caudatem* or *Paramecium aurelia* will lose its normal powers of multiplication. A division-rate of eight or sixteen a day may suddenly cease, and the race of paramecium may become almost sterile for a day or two and then be annihilated.

We have found many of these differences in division-rate and destruction to be due to specific bacterial troubles, such as the overgrowth of zooglea masses of putrefying organisms of the *B. proteus* group, the *B. turgidus* and the like. Of course, the many racial and environmental accidents that produce acute changes in the rate of division of paramecia are too numerous to allow the deduction to be made that this can be used as an indicator of pathologic tissue change.

LEONARD K. HIRSHBERG, M.D., Baltimore.

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**Rest in the Treatment of Heart-Disease.**—And last, but not least, rest. I say "last, but not least, rest," and I am always tempted to utter the paraphrase: "Now abideth diet, drugs, rest, these three, but the greatest of these is rest."—F. J. Wethered, in (London) *Clinical Journal.*

# Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### USES OF CHROMIUM SULPHATE IN MEDICINE

*To the Editor:*—Please enlighten me about the claims made for chromium sulphate. M. E. M.

ANSWER.—An answer to a similar query was published in THE JOURNAL, Feb. 4, 1911, p. 367.

In his article published in the *Monthly Cyclopedia and Medical Bulletin*, September, 1908, Dr. S. Kolipinski said, "At the annual meeting of the American Therapeutic Society, May, 1902, the writer read a concise paper on the 'Therapeutics of Chromium Sulphate.' As far as he knows, the statements there made have not been confirmed, nor has this chemical attracted attention as a medicine."

Dr. Kolipinski also said, "The diseases in which chromium has been used with success are: cirrhosis of the female breast, castration, menopause, functional impotency in men, chronic alcoholism, nervous vomiting and vomiting in pregnancy, neurasthenia, locomotor ataxia, exophthalmic goiter and the migraines."

Since that time no literature has appeared on this subject, except as noted before, and the firm which puts out the preparation of chromium sulphate still uses Dr. Kolipinski's paper as practically its sole advertising matter. There is no doubt that the substance has been tried by clinicians who have failed to obtain satisfactory results. If this were not the case, reports of its use would have appeared in reputable medical journals before this time. It seems evident, therefore, that this substance has failed to satisfy the remarkable claims made for it by its introducer.

### INFORMATION CONCERNING VARIOUS TESTS

*To the Editor:*—Please tell me where I can find a thorough description and information of how to make the following tests:

1. Lange's test of cerebrospinal fluid in congenital syphilis.
2. Complement-fixation test for gonorrhea.
3. Abderhalden's test for pregnancy.
4. Tschernogubow's blood-test for syphilis.
5. Kowarski's blood-test for differential diagnosis of diabetes.

W. E. MCKINLEY, M.D., Grant City, Mo.

ANSWER.—1. See "A Manual of Venereal Diseases," by Keogh, Melville, Leishman, Pollock and Harrison, p. 126.

2. See THE JOURNAL, Oct. 5, 1912, p. 1309. A description of the method is given by Lespinasse and Wolff, *Illinois Med. Jour.*, January, 1913, p. 26.

3. See THE JOURNAL, Sept. 6, 1913, p. 788.

4. Tschernogubow's test for syphilis is described in THE JOURNAL, April 2, 1910, p. 114, by W. J. Butler.

5. Kowarski's method of testing for sugar in the urine is a modification of the phenylhydrazin test. It consists in mixing 5 drops of pure phenylhydrazin in a test-tube with 10 drops of acetic acid, gently shaking and then adding about 1 c.c. of a saturated solution of sodium chlorid. To the solid mass that forms is added from 3 to 5 c.c. of the urine, and the test-tube is then heated in the free flame for two minutes after its contents begin to boil. On cooling, the osazone crystals separate from urines containing over 2 per cent. of sugar in one minute, and from weaker solutions in about five minutes. It will be noted that this method is merely a test for sugar and not for differential diagnosis of diabetes.

### RABIES AND THE PASTEUR TREATMENT

*To the Editor:*—I wish to raise the following questions:

1. Are there not more cases of rabies in [illegible] now than before the Pasteur treatment becar[illegible]
2. Is there not a greater death-rate [illegible]ients now than before the Pasteur treatment became popular?
3. Is the fatality among Pasteur-treated patients about 8 per cent.?
4. What would be the death-rate of dog-bitten patients minus the Pasteur treatment?

L. G. LELAND, M.D., Newton Falls, Ohio.

ANSWER.—1. The work of Pasteur did not result in an increase in the number of cases of rabies in dog-bitten patients. He drew the attention of the medical profession and the laity to the disease, which had been comparatively neglected up to that time. Since the Pasteur treatment became popularized, cases of rabies have been recognized, which accounts for any apparent increase there may be in their number.

2. Before Pasteur's studies on rabies, statistics concerning this disease were very incomplete, difficult to obtain, and not made with the care that the recent ones are. Consequently, the greater number of cases which nowadays appear are due to more research work on rabies.

3. The fatality among Pasteur-treated patients is less than 1 per cent.

4. From 15 to 20 per cent. is considered a moderate estimate of the death-rate for all persons bitten by rabid animals.

### ARTICLES ON PTOMAINS

*To the Editor:*—Please give references to the literature on the subject of ptomains.

Edward P. Fick, M.D., Seattle, Wash.

Answer.—The following is a list of articles on ptomains which have been listed in our indexes during the past ten years:

Bertrand, D. M. and Berthelot, A.: Ptomain-Producing Bacteria in Human Intestinal Flora, *Lancet*, London, Feb. 22, 1913.
Salmon, J. M.: Ptomain Poisoning, *Kentucky Med. Jour.*, June 1, 1912.
Rodman, H. D.: Ptomain Poisoning, *Kentucky Med. Jour.*, May 1, 1911.
Peck, G. W.: Ptomain Poisoning: Eleven Fatal Cases, *South. California Pract.*, March, 1910.
Bryson, M.: Ptomain Poisoning from Mutton, with Marked Bradycardia, *Brit. Med. Jour.*, Dec. 14, 1907.
Black, S. P.: Pathology of Ptomain Poisoning, *South. California Pract.*, July, 1907.
Sheppard, C.: Three Cases of Fatal Ptomain Poisoning, *South. California Pract.*, July, 1907.
Hungerford, W.: Ptomain Poisoning or Typhoid: Report of Two Cases, *South. California Pract.*, October, 1907.
Anderson, Martha: Ptomain Poisoning, a Case, *Woman's Med. Jour.*, July, 1904.
Barton, P. H.: Ptomain Poisoning, *Cleveland Med. and Surg. Reporter*, October, 1906.

When the ptomains were first discovered it was naturally supposed that all food-poisoning was due to alkaloidal poisons; but subsequent investigation has shown that the alkaloids of putrefaction (ptomains) are comparatively seldom the cause of the poisoning observed. More frequently the condition is an infection, often with the paratyphoid bacillus.

### CAUSE OF DISCHARGE FROM THE MOUTH

*To the Editor:*—A man, aged 60, during heavy sleep at night has coming from his mouth a dram or so of very offensive-smelling, bloody discharge. This occurs at irregular intervals, possibly once a week. The breath is without odor, and there is no mouth or throat condition which accounts for the discharge. Please give the origin and cause of this discharge.

James L. Tracy, M.D., Toledo, Ohio.

Answer.—It is, of course, impossible to form a valid opinion as to the cause of such a discharge, except by very careful local examination. We would suggest that the discharge might be from the sphenoidal sinus. A careful examination with the rhinoscope ought to furnish information with regard to this point.

### WORKS ON HELMINTHOLOGY

*To the Editor:—Referring* to the inquiry of W. H. H. of DeRidder, La., for information relative to books on intestinal parasites, permit me to add the following to the titles given in The Journal, Oct. 25, 1913, p. 1557:

Doflein, F.: *Lehrbuch der Protozoenkunde*, Ed. 3, Jena, Gustav Fischer, 1911.
Mense, Carl: Handbuch der Tropenkrankheiten, Ed. 2, Leipsic, Johann Ambrosius Barth, 1913.

*The latter work* is published in three volumes; of the second edition only one volume has as yet been issued. Dr. A. Looss, concerning whom W. H. H. inquires, contributes a large portion of the helminthology to this and the first editions.

L. P. H. Bahrenburg, M.D., Galveston, Tex.,
Surgeon, U.S.P.H.S.

*To the Editor:*—My attention is called to your note referring to works on intestinal parasites (The Journal, Oct. 25, 1913, p. 1557). In the interests of the general worker, this list should be revised. *Only the first reference* is actually of any value to such a man. *The second* reference is to a laboratory manual for use in college courses, the third to a single *one* of the numerous papers dealing with a particular kind of parasite. The subsequent papers by Dr. Stiles are *of great* value to the research worker but of less value to others. Probably to most of those who write you for information such papers would be unintelligible.

The work by Looss to which reference is made is one of the chapters, namely, *that on* intestinal parasites and intestinal diseases, in Mense's "Handbuch der Tropenkrankheiten." The best works for use by American worke[illegible] sler's "Modern Medicine," Volume I, and "A [illegible]" edited by Allbutt and Rolleston, Volume II, [illegible] individual chapters deal with animal parasites in a complete and authoritative fashion.

Henry B. Ward, M.D., Urbana, Ill.

## Miscellany

### Activities of the American Medical Association

The laudable work of acquainting pharmacists with the work of the American Medical Association, especially in its relations to pharmacology and the traffic in proprietary medicines, has been well performed by L. E. Warren, Ph.C., B.S., in an article in the *Journal of the American Pharmaceutical Association*, March 1913. The author describes the organization of the Association and the work of the various councils. He dwells on the work of the Council on Pharmacy and Chemistry of which he says:

"*The Council on Pharmacy and Chemistry.*—For many years previous to the establishment of the Council on Pharmacy and Chemistry the medical profession had been at the mercy of dishonest manufacturers of proprietary medicines. The simplest drug mixtures were exploited as "new synthetics" under the most outrageously extravagant claims for therapeutic worth. Numerous cod-liver oil preparations that contained little or no cod-liver oil were foisted on the helpless doctor. Consumption remedies that were practically nothing but canesugar were sold at high prices. Detail men from the manufacturing houses, having no knowledge of medicine or pharmacy, brazenly assumed to teach physicians how to treat disease. Every imaginable kind of fanciful fraud was advertised to the profession. Year after year committees were appointed by the American Medical Association in an endeavor to remedy these evil conditions. Resolution after resolution condemning the practice was passed, but the manufacturers went serenely on humbugging the doctor and his patients. One of the methods that was hit on by the Association for compelling the manufacturers to tell the truth about their products was to compel the divulgence of the formula for every preparation that was to be advertised in the Association's Journal. The medical profession then thought that the perplexing problem had been settled. But immediately some of the most wonderful "formulas" appeared in the advertisements in medical journals! Many were chemical impossibilities. Doubtless to physicians they were sometimes imposing. To chemists they were often extremely absurd. A thorough trial of the new system demonstrated that conditions were but little better than before. After much deliberation the American Medical Association established the Council on Pharmacy and Chemistry, which began the difficult task of "separating the sheep from the goats" in proprietary medicines.

The work of the Council on Pharmacy and Chemistry has a more direct bearing on pharmacy and exerts a greater influence on pharmacists than the activities of any or all of the other councils of the American Medical Association."

The work of investigating proprietary medicines, especially those with doubtful or fraudulent claims as to origin or composition first claimed the attention of the council, largely to the neglect of therapeutic problems. The investigations made of worthless, non-proprietary drugs, of various medicinal foods, of serums and vaccines are mentioned. The more recent studies on therapeutic problems are then taken up:

"*Having* practically completed the examination of proprietary medicines the council has turned a portion of its attention to problems of therapeutic research. One of these which is not yet completed is a study of the relative toxicity of synthetic salicylic acid and its compounds as compared with that of the acid occurring in plants. For many years certain manufacturers and physicians have maintained that synthetic salicylic acid owing to its impurities is more irritating—more poisonous—and consequently less efficient therapeutically, than that made from natural oil of birch or wintergreen. Others believe that there is no difference. The problem is being attacked by the Council's research committee from its chemical, clinical and pharmacologic sides. Its solution will be of great interest to science and may be of great economic benefit

> to pharmacists since the acid from natural sources costs from ten to fifteen times as much as the other kind. After exhaustive studies on cats, mice and rabbits the pharmacologic investigators have reported that they could find no difference in toxicity for these animals between the two classes of preparations. The reports of the chemical examination and of the clinical studies, each of which has been carefully carried out, have not as yet been published, but it appears probable that the findings will show that the synthetic salicylates are not less pure than the natural, that the one is not more toxic than the other and that there is no difference in the therapeutic value of the two.
>
> The question of intestinal antisepsis has been studied by the Council's research committee. For a long time it had been supposed by many physicians that certain drugs when taken internally would prevent or greatly retard the bacterial decomposition of food in the large intestine with the resultant formation of indol compounds and related poisons. Others have doubted the efficiency of the reputed intestinal antiseptics. At the Council's suggestion a well-known bacteriologist undertook to determine whether there really are any intestinal antiseptics. His results, while not absolutely conclusive, show that intestinal antiseptics cannot play as important a rôle in therapeutics as had previously been supposed, and that they are probably of little value."

The necessity of determining the composition of proprietaries and of detecting false claims led to the establishment of one of the most important departments of the association's work, the chemical laboratory. The author describes as follows the reference library connected with the laboratory:

> "A most comprehensive and complete reference library containing the latest and best books on chemistry, pharmacy and the allied sciences, has been collected by the laboratory and every important pharmaceutical and chemical journal published in any language is to be found there. The average reader may not appreciate all that this means. It means that the latest and most reliable data concerning new drugs—proprietary or otherwise—from all parts of the world are now at the disposal of the medical profession of America. The larger manufacturing houses have long realized the value of such data for purely commercial purposes, and they have been careful to keep in touch with what was going on outside this country, and were ever on the watch for anything new which might develop and which could be used by them. Physicians, however, have been among the last to learn the facts regarding new remedies; the information which manufacturers collected so zealously for themselves was not allowed to trickle out among the medical profession until it had been colored, flavored and sophisticated, often out of all likeness with the original, but always into apparent praise of the preparations marketed under trade-marked names.
>
> "In connection with this work there is being made an ever-increasing collection of information on practically every pharmaceutical or medical humbug that has come before the public in recent years. This information is collected from the federal notices of judgment under the Food and Drugs Act sent out by the government, from reports of state and municipal food and drug laboratories and from foreign journals. It can be said without fear of contradiction that there are few reports of the analyses of medicines, if at all valuable, whether made here or abroad that escape the watchful eyes of the laboratory staff. Inquiries for information about medical frauds and fakes are constantly being received. A few of these are answered through THE JOURNAL of the American Medical Association, in its department of Queries and Minor Notes, but the limitations of space make it necessary to answer the great majority by correspondence. This work is done by the laboratory staff or by an official of the Propaganda Department. As a correlated branch of the laboratory's work, a "testimonial file" has been compiled in the Propaganda Department which contains the names of several thousand physicians who have written testimonials for various proprietary preparations. As an illustration of the use that is made of this file I will quote from an article in THE JOURNAL of the American Medical Association of recent date:
>
> " 'Of 104 physicians who had written testimonials for Duffy's Malt Whiskey, five are members of the American Medical Association, and eighteen have written testimonials for other nostrums. From our files it appears that some of the 104 testimonial-givers are either advertising quacks or are connected with fraudulent medical concerns. It is not difficult to estimate the scientific value of testimonials that come from such sources.'
>
> "Doubtless the greatest value of the laboratory work has come through the fearless publicity which THE JOURNAL of the American Medical Association has given to the laboratory's exposures of the shortcomings of pharmaceutical manufacturers. No firm has been so large or so powerful as to escape criticism of its products or its methods, if criticism were needed; and no firm has been so small or so insignificant as not to receive credit for worthy preparations, if credit were due."

Warren contrasts this fearlessness with the subservient caution exercised by certain state laboratories in removing from their exhibits of adulterated goods the names of manufacturers. The abuses of nomenclature and of the use of copyrighted names are discussed. Warren continues:

> "Work of this kind by the Council on Pharmacy and Chemistry is of very great value to the individual pharmacist. It seems to me that it is the duty of pharmaceutical journals to bring these and similar facts to the attention of the pharmacists. If the journals themselves are not in position to make the investigations they can at least abstract the investigations made by the Council on Pharmacy and Chemistry."

Finally he illustrates the work of the Association by a summary of the results of investigation of certain frauds, such as Waterbury's Cod-Liver Oil Compound, prescription fakes, fake "gall-stones," En-Ar-Co Oil, Jaroma, Plantoxine, Thacher's Worm Syrup, Chichester's Diamond Brand Pills, sulphur dioxid cure-alls, Midol and Nurito, Murine, Sanatogen, vile-smelling cure-alls, such as Sulphurro, the "gas-pipe" cures and Lung-Germine.

The work of the American Medical Association in endeavoring to aid the public to obtain a broader conception of public health matters is praised and its exhibition at the International Congress of Hygiene and Demography is described. The author concludes:

> "The American Medical Association believes that the public, the pharmaceutical profession and the medical profession must all work together to abolish the public drinking-cup, to exterminate flies and mosquitoes, to eliminate the adulteration of foods, to prevent the pollution of water-supplies, to secure adequate disposal of garbage, to insure the proper cleaning of the streets in cities, and, in short, to perform any other tasks which tend to raise the standard of health and lower the death-rate of our citizens."

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## Shorter Papers

Writers of scientific papers on medical and surgical subjects will conserve their own interests as well as the convenience of those who listen to their reading, and those who will afterward enjoy the privilege of publishing them, by making them as short as is consistent with clearness of expression and the completion of the subject. As a rule there are few reasons for any paper to contain more than three thousand words, occupying about four pages of this journal. Outside of official documents and reports which cannot properly be abbreviated, only the description of a long series of important cases, similar in kind, but with noteworthy variations, should warrant a paper longer than that described, and even under such circumstances three thousand words should generally tell the story. Many of the very long papers read to tired audiences at every meeting of medical men are mere aggregations of quotations, recounting what this or that eminent man has written on the subject, giving copious references to book and page and stringing the whole together on a slender thread of personal observation. Their authors would do well to consider that in all probability most of the members of their audiences are as widely read as themselves, and sufficiently familiar with the opinions of the eminent men referred to to understand the subject without so many quotations and references. This is said in all kindness and not in a spirit of criticism. The spirit of the age demands concentration, and the concise, lucid and logical paper that tells its story in as few words as are compatible with complete expression and then stops will receive the most respectful attention and have the most satisfactory effect. By all means let us have short papers.—*Southern Med. Jour.*

# Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

## MEDICAL DEFENSE IN CANADA

The Canadian Medical Protective Association is an organization of physicians in Canada for the purpose of mutual assistance and protection against malpractice suits. It has been in existence for twenty-four years, but has only recently been incorporated by an act of the Dominion parliament. The articles of incorporation give the objects of the association as follows:

1. To support, maintain and protect the honor, character and interests of its members.
2. To encourage honorable practice of the medical profession.
3. To give advice and assistance to, and defend and assist in, the defense of members of the association in cases in which proceedings of any kind are unjustly brought or threatened against them.
4. To promote and support all measures likely to improve the practice of medicine.

The objects of this organization are considerably broader than those of similar societies, as assistance is not limited to malpractice suits, but to any unjust proceedings brought against members. The constitution, in addition to enumerating the four objects given in the act of incorporation, provides that the association shall assist in defending civil actions for damages for alleged malpractice "where such actions appear to the executive committee and to the general counsel of the association to be unjust, harassing or frivolous, or where it appears otherwise to be reasonable to afford the member whose conduct is impeached an opportunity of defending himself before a court of law."

Any member of the medical profession in good standing in Canada is eligible to membership. Applicants must be nominated and seconded by two members and must present the qualifications required for membership in the Canadian Medical Association. A local advisory committee of one or more members in each province may pass on the application for membership. The annual dues are $3. Members are liable for dues until their resignations are accepted, and provision is made for the collection of dues by draft or other agencies. The president's report for 1913 shows an increase in membership of sixty during the past year. The solicitor's report shows that in Canada, as in this country, most of the actions brought or threatened were dropped before they reached a hearing. The treasurer's report shows a membership of 812. The annual dues of $3 per member give the organization an average annual income of $2,500.

The general plan of this organization is, in the main, similar to that adopted by some of our state societies in providing for medical defense. The annual dues are larger, as most of our state associations have found it possible to provide entirely adequate defense for $1.50 per member per year. The fact that such an association with a membership of approximately eight hundred has been able to carry on this work on a $3 basis for twenty-four years is ample proof of the soundness of the plan and of the possibility of even the smaller state associations being able to furnish such protection to their members.

**Diagnosis of Intussusception in Children.**—Turning now to the symptoms of this disease (acute intussusception), there are three which are of great importance in the diagnosis of the condition in children. They are the sudden onset of screaming in a previously healthy infant, followed by vomiting and the passage of stools containing blood and often consisting of blood and mucus only, without any fecal material, the symptoms occurring in this order. In a child they are pathognomonic.—James Sherren, in (London) *Clinical Journal.*

# Medical Education and State Boards of Registration

## COMING EXAMINATIONS

Delaware: *State Society and Homeopathic, Dover and Wilmington, Dec. 9-11.* Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

Kentucky: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

Maryland: Regular, 1211 Cathedral St., Baltimore, Dec. 9. Sec., Dr. J. McP. Scott, Hagerstown.

Ohio: Columbus, *Dec. 9-11. Sec., Dr. Geo. H.* Matson, State House.

Pennsylvania: *Philadelphia,* Dec. 2-4. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

Virginia: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

### First Examination by the Canadian Medical Council

The first examination conducted under the provisions of the new Canada Medical Practice Act was held at Ottawa, Canada, in October. The results sent us by Dr. R. W. Powell, the Registrar of the Medical Council of Canada, are as follows: Of the 71 candidates examined, 44 passed, 8 were referred back to the council, having failed in not more than two subjects, and 19 (27 per cent.) were rejected. It is understood that certificates granted by the Medical Council of Canada permit the candidates to practice in any province of their choice without further examination.

### Missouri September Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the oral and written examination held at Kansas City, Sept. 2-4, 1913. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 38, of whom 27 passed and 11 failed. Seven candidates were licensed through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Hahnemann Medical College and Hospital, Chicago (1908) 77; (1912) 84. | | |
| Northwestern University Medical School | (1912) | 87 |
| Rush Medical College, Chicago | (1913) | 86, 87 |
| Bennett Medical College | (1913) | 81, 82 |
| Tulane University | (1913) | 91 |
| Johns Hopkins University | (1911) | 85 |
| University Med. College, Kansas City (1904) 75; | (1913) | 75, 84 |
| American Medical College, St. Louis (1912) 76; | (1913) | 76, 77, 79. |
| St. Louis College of Physicians and Surgeons (1908) 79; (1912) 75; (1913) 75, 75. | | |
| St. Louis University | (1913) | 80 |
| Marion-Sims College of Medicine | (1892) | 75 |
| Columbia Univ., Coll. of Phys. and Surg., N. Y. | (1913) | 88 |
| Vanderbilt University | (1912) | 81 |
| University of Texas | (1912) | 87 |
| Marquette University | (1913) | 80, 86 |

FAILED

| College | Year Grad. | Per Cent. |
|---|---|---|
| University of Arkansas | (1912) | 69 |
| Barnes Medical College (1907) 71; | (1910) | 57 |
| Ensworth Medical College | (1912) | 67 |
| St. Louis College of Physicians and Surgeons | (1913) | 59, 60, 70. |
| American Medical College, St. Louis | (1909) | 67 |
| University Medical College, Kansas City | (1913) | 66 |
| Meharry Medical College (1912) 64; | (1913) | 63 |

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| [illegible] College | (1910) | Georgia |
| [illegible] | (1905)* | Illinois |
| [illegible] | (1911) | Kansas |
| [illegible]sity, Kansas City | (1905) | Kansas |
| University Medical College, Kansas City | (1910) | Kansas |
| Homeopathic Medical College, St. Louis | (1908) | Illinois |
| St. Louis University | (1908) | Illinois |

* A statement from the college says that the college has no record of this man as a graduate.

### Minnesota October Report

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the written, oral and practical examination held at the State University, Minneapolis, Oct. 7-10, 1913. The number of subjects examined in was 11; total number of written questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 11, of whom 10 passed and 1 failed. One candidate withdrew. Twenty-one candidates were licensed through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Northwestern University .........(1911) 88.1; | (1912) | 83.3 |
| Rush Medical College .......................... | (1913) 89.9 | 89.8 |
| University of Minnesota .....(1912) 88.5, 90.3; | (1913) 85.3, | 88.5 |
| St. Louis University ......................... | (1912) | 82.3 |
| *Temple University* ........................ | (1910) | 89.9 |
| McGill University, Montreal .................. | (1909) | 86.9 |

FAILED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Meharry Medical College ...................... | (1912) | 70.4 |

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| Bennett Medical College ...................... | (1911) | Wisconsin |
| Chicago College of Medicine and Surgery ...... | (1913) | Illinois |
| Hahnemann Med. College and Hospital, Chicago | (1908) | Illinois |
| Northwestern University ..(1911, 2) Illinois; | (1912) | Iowa |
| University of Illinois, (1904) South Dakota; (1910) Illinois; (1912) Illinois; (1912) Wyoming. | | |
| State University of Iowa .......(1902) Iowa; | (1909) | Iowa |
| State University of Iowa, Coll. of Homeo. Med.. | (1909) | Iowa |
| Washington University, St Louis ............ | (1908) | Missouri |
| Univer. of Pennsylvania, (1901) Pennsylvania; | (1911) | Iowa |
| Marquette University, (1908) Wisconsin; (1912) Wisconsin; (1913) Wisconsin. | | |
| University of Helsingfors, Finland ........... | (1903) | Michigan |
| Royal University of Turin, Italy ............. | (1901) | Michigan |

## Rhode Island October Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, October 2-3, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 13, of whom 11 passed and 2 failed. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| University of Maryland, School of Medicine (1912) 90.1; | (1913)*. | |
| Harvard Medical School ....................... | (1911) | 84 |
| Tufts College Medical School ..........(1910)* | (1913) | 84.6 |
| Columbia University, Coll. of Phys. and Surgs., N. Y. | (1910) | 83.6; (1911) 89.2. |
| New York Homeopathic Med. College and Hospital | (1913) | 87.7 |
| University and Bellevue Hospital Med. College ... | (1910) | 91.3 |
| University of Vermont College of Medicine...... | (1913) | 80 |
| Queen's University, Medical Faculty ........... | (1913) | 94.6 |

FAILED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Harvard Medical School ....................... | (1913) | 77.5 |
| Laval University, Medical Department.......... | (1912) | 73 |

*No grade given.

# *Book Notices*

The Examination of Waters and Water-Supplies. By John C. Thresh, D.Sc., M.D., D.P.H. Second Edition. Cloth. Price, $5 net. Pp. 644, with 53 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

The first edition of this book was published in 1904 and is well known to water analysts. Apart from the introduction of new details and illustrations and some important additions to the discussion of water standards, there are few noteworthy changes. So far as a bacterial standard is concerned the author seems inclined to adopt Houston's well-known views, according to which a water is to be regarded as safe when it never contains *Bacillus coli* in 100 c.c. samples; reasonably safe when it contains *B. coli* in less than half the number of 100 c.c. samples examined; suspicious (in Houston's words "to be viewed with some degree of preliminary disfavor") when it contains *B. coli* in a majority of 100 c.c. samples. These standards call for a higher degree of purity than that possessed by those public water-supplies in this country which are usually regarded as of excellent quality.

Some remarkable lapses of judgment are apparent: as when the author remarks (page 64) ". . . it is doubtful whether this organism [*B. typhosus*] alone can induce the disease. I have imbibed millions of them and so has Dr. Houston, yet neither is one penny the worse. Every known fact with reference to epidemics of this fever indicates that the typhoid bacillus alone is not the cause of the disease, and it has long been suspected that some other organism, either by itself or in conjunction with the typhoid bacillus, was the cause." This with reference to a "discovery" by Loris-Melikoff of an anaerobic bacillus in typhoid stools. A curious light is thrown on some English epidemiology by the following passage (pages 65-66): "There is no question that many outbreaks are referred to drinking-water which are due to other causes. It is only necessary for an outbreak to occur for the water to become suspected, and failure to trace the infection to any other source leads to the water being condemned, especially if there is discovered any possible, however improbable, source of contamination. There is scarcely a water-supply in the country which does not stand to be condemned at some time on such evidence. Naturally an investigator does not like to acknowledge himself baffled in his endeavor to discover the cause of an outbreak of typhoid fever, and, rather than acknowledge defeat, the water-supply is condemned. This can be safely done because it is practically impossible for the water authority to prove the negative."

A Manual of Venereal Diseases. Introduction by Sir Alfred Keogh, K.C.B.; History, Statistics, Invaliding, Brevet-Colonel C. H. Mellville, R.A.M.A.; Clinical Pathology and Bacteriology, Brevet-Colonel Sir William Leishman, K.H.P., F.R.S., R.A.M.C.; Clinical Course and Treatment, Major C. E. Pollock, R.A.M.C. Second Edition. Cloth. Price, $3.75. Pp. 318, with 30 illustrations. New York: Oxford University Press, 1913.

This volume is the result of an attempt to make a report of a committee of the medical advisory board of the British Army more valuable to the ordinary military surgeon. After an introduction by Sir Alfred Keogh, the main part of the work, in which individual authorship is not distinguished, constitutes an ordinary treatise on syphilis with a shorter account of gonorrhea and soft chancre. The first chapter on history is mainly concerned with methods of prevention. The failure of former British and present Continental efforts to suppress venereal diseases by regulating prostitution is admitted, and a plan outlined for troops which includes as its first measure an appeal to the high ideal of a chaste life. When such appeal and proper educational measures fail a moderate form of punishment is advocated. The great value of physical exercise is recognized. The purely medical chapters have been revised so as to incorporate the recent advances in the diagnosis of syphilis and the most modern treatment of venereal diseases. The book is thus not merely a book for the military surgeon, but also cannot fail to be useful to the physician in private practice.

Tuberculin Treatment. By Clive Riviere, M.D., F.R.C.P., Physician East London Hospital for Children, and Egbert Morland, M.B., B.Sc., M.D., Visiting Physician to the English Sanatorium. Second Edition. Cloth. Price, $2. Pp. 247. New York: Oxford University Press, 1913.

This book aims to give the needed advice to the practitioner who wishes to apply this method of treatment. The essential unity of the various forms of tuberculin is insisted on. Two divisions of tuberculin treatment are made, first, tuberculin immunization with tolerance, which they recommend for pulmonary tuberculosis; and, secondly, tuberculous immunization without tolerance—the method employed by Wright in the treatment of local tuberculosis. In this method small doses are employed at considerable intervals without provoking distinct reactions. This form is regarded as especially suitable to children. It would seem that the recognition of the suitability of the two methods to distinct forms of disease is a great gain in clearness as to the indications for the use of this powerful agent. The directions for technic are full and clear. Dosage is reckoned in cubic millimeters instead of fractions of the cubic centimeter.

Backward and Feeble-Minded Children. Clinical Studies in the Psychology of Defectives, with a Syllabus for the Clinical Examination and Testing of Children. By Edmund Burke Huey, A.M., Ph.D., Lecturer on Mental Development in the Johns Hopkins University. Price, $1.40. Pp. 221, with illustrations. Baltimore: Warwick & York, 1912.

The importance of the problem of the feeble-minded has attracted a great deal of attention in recent years, and has resulted in an ever-increasing stream of literature. In this book attention is called to the fact that the vast majority of the feeble-minded are outside of institutions and for some period of their early life are pupils in our public schools. Of those admitted during one year to the Lincoln (Ill.) Institution for the Delinquent, at which the author made his observation on the feeble-minded, 43 per cent. had attended the public schools for one year or more. He says that, except in the case of infrequent offenders and persons whose mental disturbance is due to specific kinds of poisoning, even in their school period these children usually show exceptional conduct and can be picked out by any one trained in clinical observation. He believes that here is an opportunity for studying in advance the main sources of social danger, and of individual misfit and shipwreck. Teachers have opportunity for making observations and rendering exceptional service in this regard. The immediate need is for special classes for children likely to become delinquents. The author considers the subject under the heads of classification and terminology and clinical study of border cases. He gives data of suggested groups and lines of transition from feeble-mindedness to non-feeble-mindedness, and discusses the mental functions to be tested and observed. Many illustrative cases are given, with photographs.

Anatomy, Descriptive and Applied. By Henry Gray, F.R.S., Lecturer on Anatomy at St. George's Hospital Medical School. A New American Edition with the Ordinary Terminology followed by the Baske Anatomical Nomenclature in Latin. Revised by Edward Anthony Spitzka, M.D., Director of the Daniel Baugh Institute of Anatomy. Cloth. Price, $6 net. Pp. 1502, with 1225 illustrations. Philadelphia: Lea & Febiger, 1912.

The new American edition of Gray's "Anatomy" succeeds at the end of three years the eighteenth edition. It differs very little from its predecessor, which is only to be expected, since three years bring little change in the science. Fifty years' continuous practice has enabled the editors of this text-book to approach very near to perfection in the manner of presenting the subject.

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# Medicolegal

## Care Required in Application of Hot-Water Bottles

*(Williams vs. Pomona Valley Hospital Association (Cal.), 131 Pac. R. 888)*

The District Court of Appeals, Second District, California, reverses a judgment for the defendant and an order denying a new trial in this case, which was brought to recover on account of personal injuries occasioned by reason of alleged negligence on the defendant's part. The complaint alleged the plaintiff's entrance as a patient into the defendant's hospital, and that, while in the hospital and unconscious, a servant of the defendant placed hot-water bags on or about the plaintiff's feet in such a careless and negligent manner that the plaintiff's feet were badly burned and scalded, from which he suffered damages. The court says that certain instructions given to the jury could have had no other effect than to have told them that when the nurse applied the hot-water bottle to the feet of the plaintiff, exercising ordinary care in the manner in which the same was placed, she was absolved from all further care or attention in relation to the patient as regards the effect produced by the application of the hot-water bottle. The court is of opinion that too restricted a construction was given to the averments of the complaint.

The word "manner," in the connection under consideration, means the way of doing anything. The use of the term "manner" in the complaint should be taken to comprehend the way the act was performed, having in view the condition of the patient and the character of the remedies applied. To place a hot-water bottle of such high temperature on the feet of an unconscious man as would burn or scald the feet cannot be said to be a proper way of doing such a thing; and a pleading which refers to the manner as having produced the injury should be given such a liberal construction as would work substantial justice between the parties. To give it the construction adopted, that the subsequent effect of the application in producing burns and scalds was not to be considered, eliminated from the consideration of the jury one of the vital and principal questions presented.

The duty of a nurse, and assuming that a nurse must only exercise the ordinary care which a trained and skilled nurse would be required to use, is a continuous duty. Dealing, as she was, with an unconscious patient, unable to care for himself, it was her duty to observe the effect on the patient of the application of the remedy as much as it was to test its temperature in the first instance. The powers of resistance, the condition of the patient, must of necessity have much to do with the application of remedies, either by a physician or a nurse, and this duty could be observed only by constant and unremitting care and attention, which is just as obligatory on the nurse as is the duty of applying the remedy directed by the physician in charge.

## Supremacy of Powers of Boards of Health—Power to Close All Dairies in City

*(Alston vs. Ball (S. C.), 77 S. E. R. 727)*

The Supreme Court of South Carolina says that the defendants, comprising the board of health of the city of Charleston, passed a resolution requiring all dairies in the city to be closed on or before July 1, 1912. The plaintiffs, who were conducting a dairy within the city, brought this action to enjoin the board from enforcing the resolution. A judgment in favor of the defendants is affirmed.

As the city council undertook, by resolution, to nullify the action of the board of health, the first question to be decided was, Which of these bodies had superior authority in the premises? Under the constitution and statutes, boards of health derive their powers directly from the legislature, and not from the municipalities. Therefore the council was without power to nullify the action of the board of health.

Sections 1451 and 1463 of the Civil Code of 1912 confer ample authority on the boards of health to make and enforce all needful rules and regulations to prevent the introduction and spread of infections or contagious diseases, and generally to make all such regulations as they shall deem necessary for the preservation of the public health, and to define, declare and abate nuisances injurious to the public health. Therefore the board had authority to pass the resolution in question.

As the powers of boards of health are conferred on them by the legislature, it follows that, as long as their actions are not arbitrarily or capriciously taken, and are confined within the limits of powers constitutionally conferred on them, they are subject to no control except that of the legislature; and the court will review their actions only so far as may be necessary to see that they bear a just and reasonable relation to the object sought to be attained, and do not invade personal or property rights vouchsafed to the citizen by the constitution. Within the limits of their power, they are the exclusive judges of the propriety and wisdom of their actions, and so long as they act strictly within those limits, and not arbitrarily or capriciously, they are not subject to the control of the court. In other words, the court cannot set its judgment against theirs, for that would be to usurp their powers. Under the showing made, it could not have been said that the action of the board in this case was arbitrary or capricious, or that it had no substantial or reasonable relation to the purpose for which it was intended, namely, the protection and preservation of the public health. On the contrary, the overwhelming weight of the evidence was that it was not only desirable, but necessary to that purpose.

## Power of a Municipality to Deal with Earth-Closets

*(Malone vs. City of Quincy (Fla.), 62 So. R. 922)*

The Supreme Court of Florida holds that if earth-closets in a city for any reason become a nuisance or otherwise unlawful, the municipality may by reasonable regulations abate them, or otherwise deal with them as the charter powers may authorize. But the power of a municipality to prohibit the use of earth-closets within its limits cannot be implied merely from authority expressly given to regulate their use; and power to prohibit the use of earth-closets in a city is not conferred by general power given to conserve the public health and general welfare, when the authority to regulate the use of earth-closets is expressly conferred in definite terms, limited in their scope and purpose. When the use of earth-closets is contemplated by a municipal charter, and express limited authority is given to regulate the use of them, their proper use as such is not unlawful, and cannot be prohibited by the municipality, in the absence of express authority to do so, or unless such closets become a nuisance, or their use is otherwise unlawful and within the power of the city to abate or prohibit.

The express authority given the city "to regulate the construction, location and arrangement of earth-closets" in the connection used in the charter act of Quincy has reference to the location of such closets as they are used on property in the city, and does not authorize a prohibition of the proper use of earth-closets in any part of the city. Nor does the express authority to issue bonds for construction and maintaining waterworks and a "system of sewerage" give the city power to prohibit the use of earth-closets. An ordinance forbidding the use of earth-closets in designated portions of the city of Quincy, without reference to whether such closets are a nuisance, is not authorized by the charter act, and a judgment of the municipal court, imposing a penalty for a violation of such ordinance, is invalid, and may be quashed.

### Validity of Tenement-House Act Requiring Certificates of Health Department

(*Ex parte Stoltenberg* (*Cal.*), *132 Pac. R. 841*)

The District Court of Appeals, Second District, California, holds constitutional, as a reasonable exercise of the police power, the tenement-house act of that state, which provides that no building hereafter constructed as or altered into a tenement-house shall be occupied in whole or in part for human habitation until the issuance of a certificate by the health department or other department by municipal ordinance designated for that purpose, that said building conforms in all respects to the requirements of this act relative to the light and ventilation and sanitation of tenement-houses, etc. The court says that, generally speaking, all of the provisions, conditions and restrictions imposed by the act relate to matters affecting public health, safety and the public welfare. The police power deriving its existence from the rule that the safety of the public is the supreme law, justifies legislation on matters pertaining to the public welfare, the public health or the public morals. Legitimate business, as well as those things which are nuisances in and of themselves, is subject to control if control is necessary for the preservation of the public health and welfare. Nor does the fact that the section above referred to gives to certain officials authority to determine questions relative to compliance with the law render the act invalid. It will not be presumed that authority will be exercised wantonly or for purposes of profit or oppression.

### Appeal the Only Remedy for Unfavorable Action on Bills

(*Hoyt vs. Hughes County* (*S. D.*), *142 N. W. R. 471*)

The Supreme Court of South Dakota, in reversing a judgment rendered in favor of the plaintiff, says that he had presented at a meeting of the board of county commissioners a bill for $514.60, most of which was for personal services claimed to have been performed as superintendent of the county board of health. A small portion of the bill was for mileage and reports made by the plaintiff. The board of county commissioners allowed $32.90 of this bill, and rejected the balance of $479.70. No appeal was taken by the plaintiff from the action and decision of the commissioners in rejecting and disallowing the $479.70 of the bill, but he some time thereafter brought this action against the county to recover that balance. The county urged that the plaintiff could not maintain the action to recover the balance of account—that the plaintiff's only remedy under the circumstances was by appeal from the action and decision of the county commissioners, and not by direct action. The court is of the opinion that the defendant's contention was well grounded. It is not the method or manner or result of the manner in which such a board acts that precludes the maintenance of an original action, but it is the fact that the board has acted in a matter within its exclusive discretionary power, and having so acted, no matter how erroneously, such action can be reviewed only on appeal.

Some contention was made that the power granted by Chapter 76 of the laws of South Dakota of 1905 to the county commissioners, providing that for certain services the county superintendent of the board of public health shall receive such sums as the county commissioners may allow, is a grant of purely legislative power, the exercise of which is not subject to appeal at all. The court, however, is clearly of the opinion that the power granted to the county commissioners by this section of the statute is not a grant of legislative power, but is a grant of discretionary power to be exercised in a quasi or sort of judicial manner, and is subject to appeal under Section 850 of the political code. But, no matter whether the power granted is quasi-judicial or legislative, a direct action cannot be maintained on such a claim.

Chapter 76 of the laws of 1905 regulates the compensation of the superintendent of the county board of health. The entire amount of the items rejected was included within the provision of the statute for "such other sums as the board of county commissioners may allow," and clearly within the discretionary powers of the county commissioners. The commissioners had the right to investigate the facts in connection with such allowance, and base and form their judgment on the evidence before them. If they erred in such judgment as to such allowance, the plaintiff's only remedy was an appeal for the purpose of reviewing and correcting such action. Courts cannot control such acts of such boards by compelling them to act in any particular manner. Courts can compel them to act, but, having acted, such acts become final unless reversed on appeal, when an appeal is provided for by law.

### Employment of Physicians by Overseers of Poor

(*Meyers vs. Furnas County* (*Neb.*), *140 N. W. R. 633*)

The Supreme Court of Nebraska holds that, under the provisions of Section 14 of Chapter 67 of the compiled Statutes of 1911, if any person, not coming within the definition of a pauper, shall fall sick within any county of the state, not having money or property to pay his or her board, nursing and medical aid, it is the duty of the overseers of the poor of the precinct in which the person shall be to furnish such assistance as they shall deem necessary. This gives the overseer full authority to provide the necessary medical aid to the sick person. When a physician is employed by an overseer of the poor to give medical aid to a destitute person who has fallen sick, and the service required is performed, the fact that the overseer has not made a written report of his doings thereon to the county board cannot defeat the liability of the county for the service rendered under such employment. The averment in a petition that a person had fallen sick under such circumstances as to show her destitution and inability to provide for herself, or be provided for by others, is a sufficient allegation of the dependence on the county, when assailed by a demurrer.

### Amendment of Petition in Malpractice Case—When Verdicts Will Not Be Disturbed

(*Blakeslee vs. Van der Slice et al.* (*Neb.*), *142 N. W. R. 799*)

The Supreme Court of Nebraska affirms a judgment for the plaintiff for damages alleged to have been sustained by a failure of the defendants to properly reduce a fracture of her arm, commonly called Colles' fracture. The court says that it does not think it error that the plaintiff was allowed to amend her petition at the close of the evidence, when she asked leave to amend it by changing the word "ulna" to the word "radius" in furtherance of justice and to conform to the facts proved. To the court it seems clear that the amendment asked for could not and did not in any way mislead the defendants. The case has been tried on its merits, and whatever discrepancy appeared in the petition was properly cured by the amendment, and the defendants were not thereby misled to their prejudice. It is usually a matter within the discretion of the district court to allow or refuse to allow a pleading to be amended to conform to the evidence, and, in order to predicate error in allowing the amendment, it must be shown that the trial court has abused its discretion.

Nor could it be said that there was reversible error in permitting counsel to propound questions to witnesses pertaining to a book or treatise on the "Treatment of Fractures," so long as there was nothing in the record showing, or tending to show, that this work or any part of it was introduced in evidence, and whatever reference there was made to it was confined to the fact that there was such a work, and was without prejudice.

It was claimed by the defendants that the plaintiff violated their instructions not to use the broken arm or hand, but the evidence on that question was conflicting, and the verdict of the jury should not be disturbed. When the issues in such an action are all submitted to a jury, under proper instructions, the verdict will not be set aside unless it is shown to be clearly wrong.

# *Society Proceedings*

## COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

## CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

*Fourth Annual Session, held in Chicago, Nov. 10-15, 1913*

The President, Dr. George Emerson Brewer, New York, in the Chair

### Preliminary Report of a Simple and Rapid Method of Pyloric Closure in Gastro-Enterostomy

Dr. **George Emerson Brewer**, New York: The only safe method is the unilateral pyloric closure suggested in 1895 by von Eiselsberg. My method consists in constriction of the pylorus by an aluminum band, which is easily passed round the tube at this point, and quickly rolled with the fingers into an unyielding ring with sufficient compression to obliterate the lumen of the tube, but not to compromise the vitality of the compressed tissues. From a study of experiments on dogs, it is evident that this method of closure produces a complete occlusion of the pylorus, as proved by the facts that water will not pass the constricted point when the stomach is distended, and that sections through the pylorus and aluminum ring show by gross and microscopic examination not only that the pylorus is closed, but also that the vitality of the tissues is not impaired. A second series of experiments shows that the same method can be applied to the pyloric antrum, and also that the pylorus which has been closed for some months can have its function again restored by a second laparotomy and removal of the aluminum band.

### Report of a Series of Gasserian Ganglion Operations

Dr. **Harvey Cushing**, Boston: I have done 156 operations on the gasserian ganglion with two fatalities, which occurred in the earlier cases. In 100 consecutive cases there were operations on 46 males and 54 females. The neuralgia affected the right side in 62 cases, the left side in 36, and both sides in 2. It has long been the impression that these neuralgias occur much more commonly on the right side, but in the last fifty cases there has been an unusual number of left-sided neuralgias, which has brought the percentage up to 36, whereas previously the ratio between neuralgias of the right and left sides was about 3:1. The average age at operation was 55 years, the youngest patient being 26, and the oldest 86. The average age at onset was 45, the youngest 18 and the oldest 74.

### Gastric Hemorrhage

Dr. **John B. Deaver**, Philadelphia: Gastric hemorrhage, as a rule, is followed by hematemesis, and results from a number of disturbing factors in the mechanism of the upper abdominal circulation. In the minority of cases the blood is not at once ejected, but is passed subsequently by the bowel in the form of tarry stools. Cases of gastric hemorrhage fall into two groups, the surgical and the non-surgical. It is as great a mistake to operate in non-surgical cases as it is to withhold operation in surgical bleeding. Profuse and even fatal hematemesis without demonstrable ulceration of the stomach has been observed in a considerable number of cases, both at necropsy and at operation. In 459 of our cases of upper abdominal disease, hematemesis occurred in only 25 per cent. and 20 per cent. of these cases were either simple ulcer or cancer of the stomach. Hemorrhage more or less acute may result from the formation of the typical acute peptic ulcer, the vessels beneath the muscularis mucosa being opened by the ulcerating process. Such hemorrhage is rarely fatal, the vessels opened being small and their walls still soft and normal, permitting retraction and contraction with the formation of an occluding clot as the blood-pressure is reduced by hemorrhage. While it is true that sudden massive hemorrhage does occur in chronic gastric and duodenal ulcer, it is also true that it is not a characteristic of ulcer to bleed profusely. Occult blood or small recurring hemorrhages are far more characteristic of ulcer and it is therefore incumbent on the diagnostician, in the presence of diffuse hematemesis, to adduce considerable evidence in the way of history or examination before concluding that ulcer is present. The hemorrhage due to malignant disease of the stomach, like that of ulcer, is not commonly sudden and profuse. In the early stages it is slight, even occult in the stools. It is more apt to be persistent than the hemorrhage of ulcer and tends to become progressively more marked. The hemorrhage from malignant ulceration is a slow seepage, as a rule, which gives rise to a little systemic effect of bleeding, but reveals itself by the coffee-ground vomitus or melena. Sudden hemorrhage is one of the modes of termination of gastric carcinoma, but in all save the rarest instances such an event is merely the termination of an already established and evident malignant cachexia. Operation may be indicated in gastric carcinoma when hemorrhage chances to be an early symptom and there is still hope of cure; or it may be indicated in advanced or otherwise inoperable cancer when hemorrhage is so profuse and persistent as to shorten even the period of prognosis given to cancer.

### The Operation of Gastrojejunostomy, and the Principles Which Should Determine Its Use

Mr. **Herbert J. Patterson**, F.R.C.S., *London:* There is little doubt that the immediate results of the posterior operation are better than those of the anterior. The patients convalesce more smoothly, and vomiting is less common, while after the anterior operation it may be necessary to wash out the stomach once or twice during the first few days. As to the remote results, I am inclined to think that the advantage rests with the anterior operation. After the posterior operation some patients, although few after remaining well for months or years, begin to suffer discomfort. In some instances this is due to a mechanical defect at the site of the anastomosis, such as a constriction produced by contraction of the mesocolon encircling the anastomosis. I am quite clear that the mesocolon should be sutured to the stomach a little distance away from the suture line, and not to the jejunum or to the suture line as commonly taught. In other cases the defect is due to a kink produced by contraction of a dilated stomach, or to the formation of adhesions, or to rotation of the jejunum on its longitudinal axis during the process of suturing.

It is said that the anterior operation is more often followed by jejunal ulcer, but I do not think there is any positive proof of this. The proportion of unsatisfactory cases is undoubtedly small, not more than 5 per cent. For many years I have been maintaining that the operation of gastrojejunostomy is a physiologic one. Sir Berkely Moynihan, on the other hand, has expressed his belief that the "physiologic explanation of gastrojejunostomy is rot." What is the effect of gastrojejunostomy on the evacuation of the stomach? My experience is that in cases in which there is no organic stenosis of the pylorus, the evacuation of the stomach is slightly accelerated. Usually the stomach is empty in from three to four hours after a meal. Another means of comparing the motility of the stomach before and after operation is afforded by the study of the amounts recovered one hour after a test meal. In 60 per cent. of a series of investigated cases the amount recovered after a test meal was less after operation than before, but the difference is not very great. In sixty-six cases the average amount recovered one hour after a test meal was 190 c.c. before operation, and 180 c.c. after operation. As a rule, when there is organic pyloric stenosis, the motility of the stomach is improved by gastrojejunostomy. I think, therefore, that we may conclude that in those cases in which the gastric motility is impaired markedly by pyloric stenosis or by adhesions, the operation of gastrojejunostomy results usually in a marked improvement in the evacuation of the stomach contents. In those cases, on the other hand, in which before operation the motility is unimpaired, gastrojejunostomy usually slightly hastens, but occasionally retards, the evacuation of the stomach. Inasmuch as this retardation or acceleration falls within physiologic limits, we are justified in saying that in cases in which, before operation, the motility of the stomach is unimpaired, the evacuation of the stomach is unchanged by gastrojejunostomy.

Notwithstanding the absence of Gmelin's reaction in 27 per cent. of my cases, I believe that the presence of bile in the gastric contents is a constant and very important feature after gastrojejunostomy. My reason for this statement is the observation that, after gastrojejunostomy, in 99 per cent. of my cases there is an increase of the mineral chlorids in the gastric juice. This increase is not due to greater activity of the gastric mucosa, because, as a rule, there is (in 75 per cent. of my cases) a diminution of the total chlorids. If, then, this increase in the mineral chlorids be not the result of greater activity, it must be due to chlorids added from without to the gastric contents.

We see, then, that after a gastrojejunostomy there is a constant increase in the mineral chlorids of the gastric juice. This increase must be due to chlorids added to the gastric juice by the entrance of bile and pancreatic juice, because (1) the total chlorids of the gastric contents are diminished; (2) undoing gastrojejunostomy diminishes once more the amount of mineral chlorids; (3) if an entero-anastomosis be performed the increase in the mineral chlorids does not occur, and (4) in cases in which there is a marked excess of mineral chlorids, as a rule the increase in mineral chlorids does not follow operations other than gastrojejunostomy. Doubtless part of this increase is due to neutralization of free hydrochloric acid and consequent formation of sodium chlorid. This does not affect my argument because (1) this neutralization must be caused by the carbonates of the bile and pancreatic juice, and (2) if, before gastrojejunostomy, free hydrochloric acid be absent from the gastric contents, there is still an increase in the mineral chlorids after gastrojejunostomy. To my mind the conclusion is irresistible, that gastrojejunostomy is a physiologic operation.

The four practical lessons to be learned are these: 1. The type of gastrojejunostomy employed is of less importance than the manner in which it is performed. 2. If gastrojejunostomy be a physiologic operation its use for the treatment of gastric hemorrhage is correct and explicable. 3. Occlusion of the pylorus is an unnecessary complication of gastrojejunostomy and is based on erroneous pathology. 4. If gastrojejunostomy be a physiologic operation, then it is as efficient for ulcers of the body of the stomach as for ulcers near the pylorus; in other words, gastrojejunostomy is preferable to excision.

*(To be continued)*

## MEDICAL SOCIETY OF VIRGINIA

*Annual Meeting held at Lynchburg, Oct. 21-24, 1913*

The President, Dr. Southgate Leigh, Norfolk, in the Chair

For a list of the newly elected officers, see The Journal, Nov. 1, 1913, p. 1640.

### Heavy Silk Used to Replace a Destroyed Patella Tendon

Dr. A. R. Shands, Washington, D. C.: The patient was accidentally cut with an ax, which severed the patella tendon. He was treated immediately by his doctor, with stitches and a splint. In three weeks the union gave way, and a synovitis developed. At the second operation the patella was found retracted up the leg, with synovial fluid discharging. An effort was made to draw the patella downward; two holes were drilled in it, and through these and through the stump of the tendon I passed twelve braided silk sutures, and put on a plaster-of-Paris splint extending from toes to groin. In ten weeks I made passive motion. In three months the knee could be flexed to 45 degrees.

### Tuberculosis and Pregnancy

Dr. L. M. Allen, Winchester: Most laymen and some medical men think that pregnancy benefits the tuberculous woman. A considerable number of cases are due solely to pregnancy rendering the woman tuberculizable. The shock of labor, the loss of blood and the subsequent care of the child are a heavy strain. I have observed three cases in which the bad effect was most rapid, one patient dying sixteen days, one six weeks, and one three months after confinement. Virchow says that he never saw a case of congenital tuberculosis, and if it occurs at all it must be very rare. A child born of tuberculous parents has established a certain immunity, and if it is removed from infection it stands a good chance of not contracting tuberculosis; but it should never be cared for by its mother.

### Calculus in the Right Ureter Simulating Appendicitis

Dr. A. Murat Willis, Richmond: More than 1 per cent. of cases of supposed appendicitis turn out to be calculus. In five cases a microscopic examination of the urine disclosed blood and pus, and led to making a roentgenoscopic examination and the finding of a calculus in the right ureter. One patient declined operation, and passed the stone several months later. The advantage of the Roentgen ray in such cases cannot be overestimated.

DISCUSSION

Dr. Arpad G. Gerster, New York: In certain cases of appendicitis the reverse is true; we think that we are dealing with a kidney case when the primary trouble is in the appendix. I recall a case of a young girl with symptoms of distention of the right urinary system, but the picture was not perfectly clear. She had chills and high fever, and the loin and right hypochondriac region were exceedingly tender. Catheterization of the right ureter was negative. I operated and found the gall-bladder normal, but the kidney was enlarged. I failed to examine the other kidney and the iliac fossa. I made a lumbar incision and opened and drained the kidney. In two weeks the symptoms grew worse, the kidney disintegrated and I decided to take it out. Then I opened the abdomen through the former incision and found the appendix attached to the posterior peritoneum. It had infected the kidney by contact. I took out the kidney and the appendix, and the patient recovered.

Dr. George Tully Vaughan, Washington, D. C.: Dr. Willis did not speak of adhesions. In a boy of 20 I found the adhesions from a chronic appendix binding the ureter close to the wall of the pelvis. In a young girl the appendix crossed the ureter and firmly attached itself to the ovary.

### Dietetic Treatment of Tuberculosis

Dr. John J. Lloyd, Catawba: Carbohydrates and fats can, in a measure, be substituted for each other. We must furnish an extra supply to the cells in order to maintain nutrition, but the day of stuffing tuberculous patients is past. We aim to bring about a condition of slight overnutrition. Fat should preferably be of animal origin. Three well-balanced meals, and in addition 3 pints of milk and several eggs should be given.

### What Virginia is Doing Against Tuberculosis

Dr. B. L. Taliaferro, Catawba: Tuberculosis remains the greatest menace in our state. Last year there were 3,523 recorded deaths, and many not reported. For four years we have been waging war at the Catawba Sanatorium. There is only one private sanatorium in the state, that at "Mountain View," near Catawba. We have a well-equipped laboratory at the State Health Department in Richmond. The school-nurse and the visiting nurse are used to some extent and are active for good. The interest the corporations are taking is a hopeful sign. The Metropolitan Life-Insurance Company has visiting nurses. The Chesapeake and Ohio Railway Company and others are erecting camps for treatment. The State Colored Insane Hospital has a colony, with separate kitchens, etc. More facilities for the colored race are needed. Only those in the state prison and in the insane hospital are cared for by the state. Better facilities for diagnosis are also needed. We often have patients sent to the sanatorium in an advanced state of tuberculosis, whom we cannot admit.

DISCUSSION

Dr. L. G. Pedigo, Roanoke: One advantage of sanatorium treatment is that the patient is stopped from thinking so much about his stomach. Stomach washing, especially with silver nitrate, tends to clear up the catarrh.

Dr. Stuart McGuire, Richmond: We have no ready-made, sure-fire method of diagnosis in tuberculosis, but we should not discredit those which we have. The Roentgen ray is invaluable in certain cases in helping to clear up a diagnosis. If we sweep all these away, what have we left? We cannot wait for the pathologist to find a cavity. We must keep what we have and build on it for the future.

Dr. John J. Lloyd, Catawba: Using tuberculin in small doses is one way of studying the patient, and it is still being used by good diagnosticians. The most important single item of treatment is rest.

### Volkmann's Contracture

Dr. Stephen H. Watts, Charlottesville: I have had three cases of Volkmann's contracture caused by too tight application of splints in treating fractures. I wish to warn against this practice. Cut off the splints if necessary; it is better to have a deformity than this condition. It results from shutting off the circulation too long, which causes an ischemic myositis. Prevention is better than cure. Operative division of the flexor tendons I mention only to condemn. Shortening the bone or lengthening the tendons may be done. The former, I think, is the best. In one case I loosened up the nerves and then took out 2 or 2.5 cm. of bone. In a second case there was a fracture of the external condyle of the humerus, and a bad deformity. An incision was made from the wrist to the elbow, and I dissected up the nerves, which were badly involved. I operated two and a half months after the fracture occurred. In a third case there was a silver fork deformity. I chiseled off the upper fragment and obtained a perfect result.

### Some Methods of Preventing Puerperal Sepsis

Dr. Greer Baughman, Richmond: The prophylaxis may be placed under six heads: 1. The physician must keep clean. 2. He must have a proper armamentarium. 3. A soap-suds enema should be given before the os dilates or the waters rupture. 4. The accoucheur's hands should be treated as carefully as in major surgery. 5. No vaginal douche, before or after, should be given, except when absolutely necessary. 6. Internal digital examinations should be avoided. This is most important. The more you accustom yourselves to making external examinations, the less you will have to resort to internal examinations.

DISCUSSION

Dr. W. A. Plecker, Richmond: The midwives of the state are extremely ignorant. Fifty per cent. of the cases of confinement in the state are attended by them, which I know from being registrar of vital statistics. They have an immense number of stillbirths. Breech presentations are invariably lost by them as they do nothing to extract the after-coming head.

Dr. H. U. Stephenson, Toana: The woman should be allowed to rise to urinate, and should be carefully assisted up, in order to empty the vagina of blood and accumulations as soon as possible. Especially is this true in country practice, in which patients cannot be seen so often.

Dr. John F. Winn, Richmond: There should be a stringent law against selling the midwives ergot. I think that this is the cause of many stillbirths.

### Teaching Physiology and Hygiene in Secondary Schools

The Executive Council suggested the following: "We recommend that the Medical Society of Virginia urgently advise that the subject of physiology and hygiene be placed as a major subject in the curriculums of the secondary schools; that a committee of five be appointed by the president, to be known as the Committee of Instruction in Physiology and Hygiene, and that this committee be enlarged by inviting the following to become active members: the state superintendent of public instruction (ex officio); the president of the Teachers' Cooperative Association (ex officio), and the professor of secondary education at the University of Virginia (ex officio)."

# *Current Medical Literature*

## *AMERICAN*

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Diseases of Children, Chicago

*November, VI, No. 5, pp. 289-380*

1 *Heat and Summer Diarrhea. J. Zahorsky, St. Louis.
2 *Influence of Atmospheric Conditions on Mortality of Infants Suffering with Gastro-Intestinal Disorders. A. S. Bleyer, St. Louis.
3 *Complement Fixation Reaction of Blood of Children and Infants, Using Bacillus Abortus as Antigen. W. P. Larson and J. P. Sedgwick, Minneapolis.
4 *Experiment with Raw and Heated Cow's Milk and Its Lesson. E. C. Schroeder. Bethesda, Md.
5 Roentgen Ray in Pyloric Obstruction. L. R. De Buys, New Orleans.
6 Vulvovaginitis in Children. R. M. Smith, Boston.

1. **Heat and Summer Diarrhea.**—A very thorough study by Zahorsky has convinced him that the mortality of summer diarrhea is practically the same all over the United States. The only marked exceptions are certain cities on the Western Coast. The mortality of diarrheal diseases is twice as high in the summer as in the winter. A room temperature of more than 85 F. has a detrimental influence on the sick baby.

Hyperthermia may be produced in infants when the day and night temperature is more than 85 F., but this thermic fever does not produce diarrhea or appreciably raise the mortality rate. Summer diarrhea is not the effect of high atmospheric temperature alone, but it cannot as yet be denied that excessive heat may lower the tolerance to carbohydrates and other elements of food.

Zahorsky says we must seek the cause of summer diarrhea (1) in micro-organisms whose virulence and activity may be increased in the summer; (2) in endogenic or ectogenic toxic substances of unknown nature.

2. **Atmospheric Conditions and Mortality of Infants with Gastro-Intestinal Disorders.**—Bleyer found that a definite relation between atmospheric heat and deaths among infants suffering with gastro-intestinal disturbance exists; at what degree of heat lethal effects are seen does not appear in his charts. So-called "heat-peaks" or short-lasting but excessive temperatures doubtless emphasize, but they do not dominate the summer infant death-rate; whether many of these deaths are the direct result of "heat-stroke," although easily suppos- able, has not been shown. Continuous heat shows a stronger relation, although not necessarily an immediate relation, to

deaths of infants suffering with gastro-intestinal disorders, which, as infants are now housed and fed, is very fairly constant.

3. **Complement Fixation Reaction of Blood of Children and Infants.**—In systematically examining the serum of women who have aborted, Larson and Sedgwick have found that a large number give a positive complement-fixation reaction using the *B. abortus* as antigen than when the ordinary syphilitic antigen is used.

From the work of Cotton and Schroeder we know that 10 per cent. of market milk contains the *Bacillus abortus*; there can, therefore, be little doubt that any individual using dairy products is amply exposed to infection. Bang has shown that animals may readily be experimentally infected with this organism by administering it per os. If the *B. abortus* is pathogenic for human beings, as it is for guinea-pigs, and can be transmitted through the digestive tract as is the case with cattle, we would expect infants and children to be the subjects most frequently infected. Larson and Sedgwick have to date examined the blood of 425 children by the complement-fixation method and have found at least some support of the above-expressed hypothesis. Of these 425 cases they found seventy-three positive and 352 negative reactions. In other words, the blood of 17 per cent. contained antibodies against the *B. abortus*. Agglutination tests were made in a large number of cases. They found in working with human serum, as did Holt with bovine serum, that the agglutination and complement-fixation tests run parallel. Ehrlich and Morgenroth found that the specific hemolytic antibodies would unite with the washed erythrocytes when the latter were placed in the serum and left for a few hours. By centrifuging this mixture and decanting off the supernatant serum they found that the latter had, by the contact with the blood-cells, been depleted of the hemolytic antibodies. In other words, the antibodies had attached themselves to the blood-cells and been removed with these.

The same is true of the *B. abortus* antibodies. By treating a positive serum with a suspension of the Bang bacillus, the serum, after a few hours' contact, has been found to be negative when separated from the organisms by the centrifuge. If an adequate amount of complement is then added to the sensitized bacilli and incubated for an hour, the complement will become fixed, thus indicating further that we are dealing with specific antibodies. To the pediatrist, it is of particular interest that inoculations of guinea-pigs with the *B. abortus* has been shown to produce lesions of the lymph-nodes, spleen, liver, kidney, testicle, lung and bones, and that these lesions are suggestive, anatomically, of those of tuberculosis. These findings of competent observers together with the experience that inoculation may produce epiphyseal enlargements, and 17 per cent. of positive reactions among children with anatomic lesions of the osseous system, most of them with clinical diagnoses of tuberculosis and rickets, indicate very clearly the need of further investigation.

4. **Raw and Heated Cow's Milk.**—Schroeder believes those who have studied the question impartially cannot be far from the conclusion that the infants who must, unfortunately, be fed artificially on cow's milk or the milk of a foreign species, and invalids whose diet is restricted as a whole or in part to milk, should receive properly certified milk efficiently pasteurized, or preferably, boiled, and that the general milk-supply should be made as good as the economic conditions affecting the production and handling of milk permit, and should be properly pasteurized, or preferably, boiled, under official supervision. It is constantly becoming more and more apparent that we lack the means to produce cow's milk that is constantly free from pathogenic agents, just as the number of instances are increasing which prove that seemingly healthy individuals often are dangerous disseminators of disease germs. Milk is a cause of much disease, and there are several kinds of milk that are responsible for this charge. Dirty, stale, adulterated or otherwise objectionable milk, raw, pasteurized or boiled, is and remains a menace to health. Heat, applied to milk, is not a renovating, rejuvenating or a cleansing agent; all one can expect of it is to neutralize those specific germs of disease that find their way into milk, which is the best culture medium for bacteria among all articles of food.

## American Journal of Insanity, Baltimore

*October, LXX, No. 2, pp. 281-544*

7 *Cerebral Syphilis: Clinical Analysis of Twenty-Six Cases—Seven with Autopsy. D. K. Henderson, Baltimore.
8 *Clinical Contribution to Irregular and Unusual Forms of Status Epilepticus. L. P. Clark, New York.
9 Conditions in South China in Relation to Insanity. C. C. Selden, Canton, China.
10 Statistical Studies of Insane. J. V. May, Albany, N. Y.
11 Genetic Concept in Psychiatry. W. A. White, Washington, D. C.
12 Psychology and Medical School. E. S. Abbot, Waverly, Mass.
13 Widening Field of Practical Psychiatry. W. L. Russell, White Plains, N. Y.
14 Problems with Insane. L. V. Briggs, Boston.
15 *Occupation as Remedial Agent in Treatment of Mental Diseases. A. V. Goss, Taunton, Mass.
16 Congregate Dining-Room and Its Management. A. H. Harrington, Howard, R. I.
17 Improvement of Medical Service and Care and Treatment of Insane. W. G. Ryon, Albany, N. Y.

7. **Cerebral Syphilis.**—Henderson's paper consists of the systematic clinical analysis of twenty-six personally observed cases of cerebral syphilis, in seven of which the diagnosis was confirmed by autopsy. He says that cerebral syphilis plays an important part in the production of mental disease, and should occupy a more prominent place among the organic psychoses than it heretofore has done. The *Spirochaeta pallida* has for long been surmised to be the causal organism, but it was not until 1910 that Strasmann first demonstrated its presence in the central nervous system of an adult with acquired syphilis; the second case is reported in this thesis. Trauma, alcoholism and physical and mental strain are important contributory factors. Reinfection with syphilis is quite possible provided the initial infection has been thoroughly cured. Anatomically, three main types of cerebral syphilis are differentiated; viz., meningitis, endarteritis and gumma. Clinically, this differentiation is seldom possible, and is without practical value, as the treatment is the same in all irrespective of the type. The majority of cases of cerebral syphilis develop within the first three years after primary infection, and rarely more than ten years after infection.

In regard to the physical signs, Henderson says that the Argyll Robertson phenomenon is the one on which most weight should be laid in differential diagnosis, as it is rarely present in cases of cerebral syphilis. Other important features are: (a) an acute onset with headache, dizziness and vomiting; (b) cranial nerve palsies; (c) convulsions without loss of consciousness, but usually followed by permanent focal symptoms; (d) intactness of speech and writing; (e) absence of facial tremor. Cerebral syphilis not infrequently causes pseudobulbar paralysis, and six cases of this affection have been reported. The mental symptoms of cerebral syphilis are of the nature of those seen in acute organic reactions, and consist of confusion, delirium, amnesia, hallucinations, retention defect and a poor memory for recent events; in addition there is relatively little disintegration of the personality. The Wassermann reaction must be considered in relation with the clinical picture in each individual case; when the Wassermann reaction with the cerebrospinal fluid is negative, the diagnosis of cerebral syphilis is indicated.

It is frankly admitted by Henderson that there is no pathognomonic sign for cerebral syphilis; but if the nature and character of the onset and the above-mentioned physical and mental symptoms and signs are correlated, a disease entity is formed which has every right to be considered characteristic. Anomalous features, among which may be mentioned euphoria and grandiose ideas, and confabulatory states, are more common in cerebral syphilis than is generally recognized; special attention must be paid to the setting in which these features occur, because when occurring in a setting of confusion they mean practically nothing.

Recent statistics confirm Henderson in the opinion that the prognosis of cerebral syphilis, as compared with other organic affections of the nervous system, is relatively good; the most favorable cases are those which develop soon after the primary infection, and those of a meningitic or gummatous type. Mercury, no matter in what form administered, is an exceedingly valuable drug in the treatment of syphilis, provided it is given in a systematic way. The best results are, however, probably obtained by combining mercurial and salvarsan treatment. Potassium iodid acts simply as an eliminative agent, and has no specific action on the *Spirochaeta pallida*. The only safe treatment is prophylaxis.

8. **Unusual Forms of Status Epilepticus.**—In the past ten years, in private practice, Clark has known three of his severest cases of epilepsy with status attacks to enjoy complete remission or cure from any manifestation of the epilepsy for three, five and eight years, respectively, and this, too, occurred without sedative medication being employed. One patient had as many as 120 grand mal attacks a day and fever of 105 F. during the status. He states, however, that all of these recoveries occurred in cases of short duration and in which no mental changes had taken place. They were, by all strict tests, however, true epilepsy as ordinarily considered.

15. **Occupation in Mental Diseases.**—Among no class of patients are the beneficial effects of employment more marked than among the insane in our hospitals. Employment as a remedial agent has been made use of in the Taunton State Hospital from the time it was opened in 1854 until the present time, a period of nearly sixty years. Goss considers the results obtained in consequence of the employment of patients in this institution during this long period.

### Annals of Ophthalmology, St. Louis

*October, XXII, No. 4, pp. 617-797*

18 Ocular Comfort and Its Relation to Glare from Reflecting Surfaces. F. A. Vaughn and N. M. Black, Milwaukee, Wis.
19 Degeneration of Corneas of Man and His Adult Son. B. Chance, Philadelphia.
20 Hole in Disc. C. Williams, Philadelphia.
21 Trephining Operation in Glaucoma. J. S. Wyler, Cincinnati.
22 Interstitial Keratitis of Luetic Origin. G. S. Derby and C. B. Walker, Boston.
23 Usefulness of Dionin in Early Senile Cataract. E. L. Jones, Cumberland, Md.
24 Prevalence of Opticians' Mistakes. I. Hartshorne, New York, and A. C. Durand, Ithaca.
25 New Operation for Extirpation of Tarsus of Upper Lid; Report of Case. F. W. Dean, Council Bluffs, Ia.
26 Case of Primary Sarcoma of Cornea. L. W. Dean, Iowa City, Ia.

### Archives of Pediatrics, New York

*October, XXX, No. 10, pp. 721-800*

27 Why Does Operation for Removal of Adenoids Frequently Fail to Relieve Mouth Breathing? H. M. McClanahan, Omaha, Neb.
28 *Ammoniacal Diaper and Its Correction. T. S. Southworth, New York.
29 *Influence of Variations of Diet on Gastric Motility in Infants. M. Ladd, Boston.
30 Importance of Wassermann Reaction from Prognostic as Well as Diagnostic Standpoint. W. P. Lucas, Boston.
31 Age and Seasonal Incidence of Diseases of Children. C. Herrmann, New York.
32 Infant Feeding. H. Rulison, Albany, N. Y.
33 *Treatment of Hernia in Infancy. J. P. Hoguet, New York.
34 Public and Professional Confidence in Certified Milk and Basis for This Confidence. M. J. Synnott, Montclair, N. J.
35 Tent-Basket for Outdoor Sleeping of Infants. W. Truslow, Brooklyn.
36 Serotherapy of Epidemic Cerebrospinal Meningitis: Report of Cases. H. A. Ong, Washington, D. C.

28. **Ammoniacal Diaper and Its Correction.**—The detection of a noticeably ammoniacal odor on the diapers of an infant, especially if the diaper has been recently removed, and the phenomenon is repeated, Southworth says, points to a definite disturbance of metabolism. Furthermore, this ammoniacal odor may be regarded to some extent as an index of the disturbance, since it tends to disappear when the food has been adjusted so as to allow of more perfect metabolism. For the present, the fat of cow's milk seems to be the more frequent offender when given in excess of the normal capacity, or in cases of fat intolerance when given in excess of the individual's capacity. Southworth insists that more attention should be paid than has been paid in the past to the ammoniacal diaper as a clinical sign. The great desideratum in imparting to others the principles of infant feeding is to be able to point out definite indications for changes in the composition of the food. An odor of ammonia on the diaper furnishes such indication, for it at once directs attention to a disturbance of metabolism, presumably traceable to an actual or relative over-feeding with the fat of cow's milk.

29. **Influence of Diet on Gastric Motility in Infants.**—Ladd states that the casein of cow's milk, when given in high percentages, has a decided action in prolonging the emptying time of the stomach. If this casein is precipited outside the body, the emptying time is greatly accelerated. The presence of fat has no retarding action, and in some cases seems to favor the exit of the stomach contents. Ladd is of the opinion that there is some reason to believe that barley starch renders the food more easy of exit.

33. **Treatment of Hernia in Infancy.**—Experience leads Hoguet to say that operation is always indicated in otherwise healthy babies that have a hernia that cannot be perfectly held in place by a truss—and the word perfectly is emphasized—that the operation itself is without danger and the anesthetic, if properly given, is of very little danger. All patients with strangulation or persistent incarceration must, of course, be operated on as soon as possible. The treatment of umbilical hernias in infants is comparatively simple. If treatment is begun early enough, that is, when the child is only a few months old, practically all of these patients can be cured by applying a small pad over the hernia and holding it in place with a piece of adhesive plaster, which is carried all the way around the body. The plaster has to be renewed every ten days or so, and it is very important that there be no interruption in the treatment. The pad and plaster generally have to be kept on for five to ten months before the child is cured. In children over two years of age this method of treatment should be given a trial for a few months, and then if not successful operation is indicated. Either the ordinary suture by layers or the horizontal overlapping operations give very excellent results in children.

### Boston Medical and Surgical Journal

*November 6, CLXIX, No. 19, pp. 665-700*

37 Progress and Problems in Preventive Medicine. M. J. Rosenau, Boston.
38 Surgical Treatment of Pulmonary Tuberculosis. M. E. Lapham, Highlands, N. C.
39 Orthopedics and Sanatorium. H. J. Hall, Marblehead, Mass.
40 Hereditary Chorea with Report of Case. W. A. Boyd, Westport, Conn.

### Journal of Experimental Medicine, New York

*November, XVIII, No. 5, pp. 487-600*

41 *Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice: The Blood-Picture at Various Periods after Splenectomy. J. H. Musser and E. B. Krumbhaar, Philadelphia.
42 *Idem: Effect of Hemolytic Serum in Splenectomized Dogs. R. M. Pearce and M. M. Peet, Philadelphia.
43 *Relation of Pulmonary and Bronchial Circulation. A. A. Ghoreyeb and H. T. Karsner, Boston.
44 *Studies in Infarction: Circulation in Experimental Pulmonary Embolism. H. T. Karsner and A. A. Ghoreyeb, Boston.
45 Purins and Purin Metabolism of Some Tumors in Domestic Animals. E. R. Long, Chicago.
46 Hemolytic Properties of Fatty Acids and Their Relation to Causation of Toxic Hemolysis and Pernicious Anemia. W. F. McPhedran, Toronto.
47 *Pneumonic Lesions Caused by Bacillus Megatherium. M. Wollstein and S. J. Meltzer, New York.
48 *Character of Pneumonic Lesions Produced by Intrabronchial Insufflation of Virulent Streptococci. M. Wollstein and S. J. Meltzer, New York.
49 *Disturbances of Heart-Beat in Dog Caused by Serum Anaphylaxis. G. C. Robinson and J. Auer, New York.
50 *Experiments on Cultivation of So-Called Trachoma Bodies. H. Noguchi and M. Cohen, New York.
51 Toxicity of Gentian Violet and Its Fate in Animal Body. J. W. Churchman and L. F. Herz, New Haven.
52 *Comparative Viability of Pneumococci on Solid and on Fluid Culture Media. L. J. Gillespie, New York.
53 Ferment Action: Toxicity of Some Proteoses. J. W. Jobling and S. Strouse, Chicago.
54 Idem: Relation between Lysis and Proteolysis of Pneumococci. J. W. Jobling and S. Strouse, Chicago.

41. **Blood Destruction and Regeneration.**—After splenectomy, Musser and Krumbhaar state that anemia usually develops quickly and reaches its height in from three to six weeks; then with gradual improvement the blood-picture

approaches the normal after about three to four months, with complete return to normal in five to ten months. Accompanying this is marked leukocytosis reaching its height in twenty-four hours but persisting to a slight degree for several months. Variations, however, may occur, in that the anemia may develop slowly and be of slight degree, or the reparative process may be delayed and up to ten months incomplete. The anemia is, however, inevitable, as is also, later, some degree of repair.

42. **Idem.**—The increased resistance of the red blood-corpuscles characteristic of the splenectomized animal, Pearce and Peet found, is as evident one year after removal of the spleen as it is at earlier periods. So also is the decreased tendency to jaundice after the administration of hemolytic serum. The increase in resistance of the red cells cannot be explained on the basis of an increase in reticulated cells in the circulating blood.

43. **Relation of Pulmonary and Bronchial Circulation.**—The most striking point brought out in this study by Ghoreyeb and Karsner is that as long as a definite pressure is maintained in either the pulmonary or bronchial circulations, the admixture of bloods is extremely limited. If, however, in either system the pressure sinks to zero the possibility of supply by the other system becomes evident. It takes much longer for the mass injected through the bronchial arteries to penetrate to all parts of the lung than when the mass is injected through the pulmonary artery; but when accomplished, the injection reaches to all capillaries including those of the pleura, the only vessels remaining uninjected being the larger trunks of the pulmonary artery. On the other hand, the injection of the bronchial vessels by way of the pulmonary arteries is not complete with normal pressure, but occurs rapidly when a high pulmonary pressure is employed. It is therefore probable that either circulation can suffice for the simple nutritive demands of the lung if the other system is interfered with.

It has been shown that embolism of the pulmonary artery, without other circulatory disturbance, does not lead to necrosis of the affected area of the lung, but it is probable that the preservatioin of circulation is not due to collateral bronchial circulation so much as to the free anastomosis and early division into capillaries of the pulmonary artery. In support of this statement is the fact that the appearance is not altered when the bronchials are ligated at their origin. The same ligation shows no subsequent interference with the nutrition of the bronchi up to a period of five weeks, demonstrating that the pulmonary circulation is sufficient to provide for the nutrition of the bronchi. If, however, as Virchow has shown, the pulmonary artery supplying an entire lobe be occluded, the bronchial circulation can and does suffice for the nutrition of the lobe.

In the case of the occlusion of a branch of the pulmonary artery the pressure in the area interfered with does not sink to zero because of the collateral circulation in this area; whereas, if the main trunk is occluded no collateral supply is available, the pressure sinks to zero, and the bronchial artery becomes available as a source of blood-supply. From these studies it would appear that the part of the lung tissue not in intimate contact with oxygen in the air is supplied by oxygenated blood of the bronchial arteries, and that the tissues through which the pulmonary blood circulates take up whatever organized nutriment they need from the pulmonary blood and possibly provide for their oxygen and carbon dioxid interchange (which must be very slight) either directly with the alveolar air, or by finding sufficient oxygen in the venous blood of the pulmonary artery.

44. **Infarction.**—The same laws for mixture of the blood of bronchial and pulmonary vessels laid down in connection with the circulation in the lung in general, was found to apply also to the circulation in an area of embolism; i. e., there is no notable mixture of the bloods until the pressure in the one system or the other sinks to zero. Simple embolism of the pulmonary artery results in lowered pressure in the embolic area, the pressure, however, not sinking to zero unless the blood-supply of an entire lobe is cut off. The circulation in the embolic area may be improved by increasing the pressure in either the pulmonary or bronchial arteries, but so long as the two circulations are going on, extremely high pressures are not sufficient to restore the circulation to normal in the area of embolic congestion. With normal pressures in the two vascular systems, an area of pulmonary embolism involving less than the entire lobe receives its blood-supply almost entirely from the rich anastomosis of the pulmonary artery between its own branches, and only when the bronchial pressure is raised to an extremely high point does the blood from this vessel play a notable part in the circulation in the area.

47. **Pneumonic Lesions Caused by Bacillus Megatherium.**—The saprophytic *Bacillus megatherium*, Wollstein and Meltzer found, produced a definite pulmonary lesion which in gross appearance resembled the lesion of lobar pneumonia. The lesion was one of intense leukocytic exudation which, as in some other cases of experimental lobar pneumonia, did not invade the framework of the lung. But the exudate contained no fibrin. There were practically no bacilli, either in the heart's blood or in the lung. The growth of two colonies from one of the cases hardly changes the rule. The lesion did not progress after twenty-four hours; nor did it show a definite increase in extent or intensity with the increase in quantity of the injected cultures. The resolution of the exudate began practically at the end of twenty-four hours and was far advanced on the third day. Although there was considerable leukocytic infiltration there was no phagocytosis apparent twenty-four hours after inoculation. Taking all the facts into consideration, the authors gain the impression that the lesion produced by the saprophytic *Bacillus megatherium* differs only quantitatively from that produced by an avirulent pneumococcus. The fact stands out prominently that a saprophytic bacterium is capable of producing a pneumonic lesion similar in gross appearance to that of mild lobar pneumonia. The authors suggest that it is not improbable that other saprophytes may be capable of producing pneumonic lesions which, in specific instances, may resemble lobular pneumonia.

48. **Lesions Produced by Virulent Streptococci.**—The several investigations which Wollstein and Meltzer have carried out seem to show conclusively that in general the streptococcus causes a lobular pneumonia which, besides the leukocytic intra-alveolar exudation, is characterized by a leukocytic infiltration of the lung framework, and that the pneumococcus causes a lobar pneumonia, which is practically free from leukocytic infiltration of the interstitial tissue of the lung. Furthermore, a virulent pneumococcus causes a lesion in which fibrin is a prominent element in the exudate and that element distinguishes the exudate sharply from the exudate of the lesion caused by a virulent streptococcus in which fibrin is present only in moderate amount. It distinguishes it in a still more striking manner from the exudates of the lesions caused by non-virulent pneumococci or streptococci, in which fibrin is present only in very small amounts. It seems that the formation of fibrin is connected in some specific way with the pneumococcus on the one hand, and with the virulence of the organism on the other. For even with the relatively small amounts of fibrin present in the exudates of lesions caused by the streptococcus there is a perceptible difference in the quantity according to the virulence of the organism. Whether fibrin is a means which enhances virulence, or whether it is a reaction product against it, the authors' experiments so far do not entitle them to discuss.

49. **Disturbances of Heart-Beats in Dog.**—Robinson and Auer found that anaphylactic shock in the dog, caused by the intravenous injection of horse-serum into sensitized animals, may produce definite cardiac disturbances which are revealed by the electrocardiogram. These cardiac changes consist of disturbances in conduction of the heart impulses, abnormalities in the ventricular contractions, and other unusual disturbances of the mechanism of the heart-beat. They come on very quickly after the injection of serum and may be of short duration, and are not obtained during anti-anaphylaxis. They are not the result of the marked fall in blood-pressure which

occurs, nor does the central cardiac inhibitory mechanism play a part in their production. These cardiac disturbances apparently are a definite primary expression of anaphylactic shock in the dog. The right ventricle seems to be more affected than the left.

50. **Cultivation of Trachoma Bodies.**—An organism was isolated by Noguchi and Cohen and studied in pure cultures from cases of conjunctivitis accompanied by the so-called trachoma body inclusions, as well as from a case of old trachoma without inclusions. This organism was not found in the cultures made from other forms of conjunctivitis in which the inclusions were absent. The organism presents the morphologic features characteristic of so-called trachoma bodies. It undergoes an early transformation, during which the forms known as initial bodies appear, and a later change, during which forms resembling elementary granules arise, while certain intermediate forms between these occur simultaneously. No definite cell inclusions could be produced in monkeys by inoculating pure cultures of the organism.

52. **Comparative Viability of Pneumococci.**—According to Gillespie, pneumococci, when freshly isolated from the body, are able to live and multiply when a small number of them are inoculated into a small amount of broth. If, however, the inoculations are made in large amounts of broth, many more bacteria must be inoculated in order that they may grow. It requires much smaller numbers of pneumococci to start a growth on agar than are required to start a growth in broth. This predilection for solid medium disappears when the bacteria are grown for some time outside the body. This phenomenon is not dependent on differences in chemical composition between the two media employed or on the presence of more available oxygen in one case than in the other. Gillespie suggests that it is probably dependent entirely on physical differences in the two kinds of media, and bears some relation to the differences in possibilities for diffusion in the two media.

### Laryngoscope, St. Louis

*October, XXIII, No. 10, pp. 961-1040*

55 Use of Normal Horse-Serum as Means of Controlling Hemorrhage in Oto-Laryngology. M. A. Goldstein, St. Louis.
56 Hiss Leukocyte Extract in Complications of Nasal and Aural Surgery. W. H. Haskin, New York.
57 Case of Nasal Polypi Involving Orbit, Frontal Sinus and Anterior Fossa of Skull. W. R. Chamberlin, Cleveland.
58 New and Efficient Treatment of Atrophic Rhinitis. K. K. Wheelock, Ft. Wayne, Ind.
59 Influence of Sounds of Different Pitch, Duration and Intensity in Production of Auditory Fatigue. W. A. Wells, Washington, D. C.
60 Sub-Periosteal Temporal Abscess of Otitic Origin without Intra-Osseous Suppuration. H. Luc, Paris, France.
61 Glio-Sarcoma of Left Lobe of Cerebellum, Giving External Symptoms of Mastoiditis. J. F. McCaw, Watertown, N. Y.
62 Use of Gauze Packing in Ear Canal. M. D. Stevenson, Akron, O.

### Medical Record, New York

*November 8, LXXXIV, No. 19, pp. 829-874*

63 Neurovascular Gangrene. M. D. Bloomfield, Philadelphia.
64 Neuroses and Psychoneuroses of Children: Mode of Development and Treatment. B. Rosenbluth, New York.
65 Laryngeal Cases. W. F. Chappel, New York.
66 Methods in Joint Diagnosis. W. S. Thomas, New York.
67 Is Sterilization Destined To Be Social Menace? G. F. Lydston, Chicago.
68 Anatomy of Uterine-Pelvic Support. J. W. Winston, Norfolk, Va.
69 High Eosinophil Percentage of Unexplained Origin. E. Amberg, Detroit, Mich.

### Michigan State Medical Society Journal, Grand Rapids

*November, XII, No. 11, 569-634*

70 Syphilis with Special Reference to Value of Salvarsan and Neosalvarsan in Its Treatment. A. P. Biddle, Detroit.
71 Uterine Myoma and Malignancy. W. P. Manton, Detroit.
72 *Roentgenoscopy in Recognition of Pyloric and Duodenum Ulcer; New Sign of Duodenal Ulcer. J. T. Case, Battle Creek.
73 Direct Blood-Transfusion. J. W. Vaughan, Detroit.
74 Ileus. A. I. Lawbaugh, Calumet.
75 Fever: What It Is, and Its Significance as Symptom. J. H. Dempster, Detroit.
76 Tuberculous Peritonitis. D. E. Robinson and W. L. Finton, Jackson.
77 Present Status of Salvarsan in Treatment of Syphilis. R. C. Jamieson, Detroit.
78 Case of Multiple Intra-Uterine Fractures. D. M. Cowie, Ann Arbor.
79 Three Cases of Secondary Syphilis. J. H. Stokes, Ann Arbor.
80 Two Cases of Carcinoma of Prostate. I. D. Loree, Ann Arbor.
81 Addison's Disease without Pigmentation: Report of Case with Necropsy. H. B. Schmidt, Ann Arbor.

72. **Roentgenoscopy in Pyloric and Duodenal Ulcer.**—Spastic hour-glass stomach is described by Case as a sign of duodenal ulcer. He reports sixteen operated cases of duodenal ulceration in which this spastic indrawing, high up on the greater curvature, was noted. In a number of other cases of duodenal ulceration (operated) no spastic indrawing was observed. In at least two other cases, the patient was examined on three successive mornings. On the first and third mornings, the spastic indrawing was noted. On the second morning, although the patient was observed repeatedly, no such spastic indrawing could be seen. In differentiating between a spasm due to gastric ulcer and spasm due to duodenal ulcer, Case has observed that in duodenal ulcer, there is not a point of pain on pressure over the lesser curvature corresponding to the level of the spastic indrawing; on the contrary, there is pain on pressure over the duodenum; and manipulation of the duodenal region increases the depth of the spastic indrawing. This spastic manifestation, however, has also been observed in one case of exophthalmic goiter and in some cases of appendicitis and in at least half a dozen cases of gall-stones in which, at operation, the surgeon was unable to find any duodenal or gastric ulcer.

### Military Surgeon, Washington, D. C.

*November, XXXIII, No. 5, pp. 401-502*

82 Greatest Battle of the War—Gettysburg. L. C. Duncan, U. S. Army.
83 What Would Be Ideal Relationship of Hospital Ship to Fleet from Standpoint of Hospital Ship? M. F. Gates, U. S. Navy.
84 Field Hospital in Peace and War. H. S. Bakatel, U. S. Army.
85 United States Marine Hospital as Public Health Factor. J. R. Hurley, U. S. Public Health Service.

### Mississippi Medical Monthly, Vicksburg

*November, XVIII, No. 7, pp. 127-146*

86 Carriers. H. D. King, New Orleans.
87 Physician's Part in Child Training. M. Caraway, Gulfport.
88 "Health and Hygiene." M. Stewart, Biloxi.
89 Plumbism of Gunshot Wounds. T. F. Clay, Tutwiler.

### New Orleans Medical and Surgical Journal

*November, LXVI, No. 5, pp. 343-430*

90 Surgery of Exophthalmic Goiter. J. M. Batchelor, New Orleans.
91 Medical Aspects of Exophthalmic Goiter. H. P. Jones, New Orleans.
92 Hysteria. F. C. Bennett, Monroe, La.
93 Epidemiologic Philosophies. H. D. King, New Orleans.
94 *Mechanical Device for Blood-Vessel Anastomosis. Christian and Sanderson, Shreveport, La.
95 *Transmission of Pellagra from Man to Monkey. W. H. Harris, New Orleans.

94. **Device for Blood-Vessel Anastomosis.**—Two metal rings and a holder are used by Christian and Sanderson. The thickness of the rings varies with their diameter, but even the largest size is not thicker than the lead in an ordinary pencil. The inside diameter of the rings corresponds to the outside diameter of the vessel being operated on. From one lateral surface of each ring project five or six very small bearded points, not longer than 1/16 to 1/8 of an inch. Short pieces of a dentist's brooch make admirable points. Two pieces of small, pliable wire ¼ inch long project out from opposite sides of the convex border. The holder is an instrument similar to a small dressing forcep, with the simplest pin-lock, so that two parts may be attached or detached at any degree of opening of the blades. The tip of each half of the holder is made with a clip and slip-cuff, so that a ring of any size may be held firmly, the ring being held edgewise. Using a holder, the ring is passed over the cut end of the vessel, which is then everted and pinned to the ring by the use of a dissecting forcep or the finger tip; the little bearded points holding it nicely. The other cut end is likewise everted and pinned to the other ring. The two parts of the holder are now fitted together and closed and locked, which brings the rings into perfect apposition and with any degree of pressure desired. A twist of the soft wire binders completes the anastomosis and the holders are removed.

95. **Transmission of Pellagra.**—In July, 1910, a typical, fatal case of pellagra presented itself for necropsy to Harris. The necropsy showed only lesions consistent with pellagra, and no other evidences of concomitant disease were present. Portions of the brain and cord, and the lesions of the gastro-intestinal tract and skin were collected. Emulsions were prepared and Berkefeld filtrates derived therefrom. These were inoculated in large quantities subcutaneously, intravenously and intracranially. After an unexpectedly long period of incubation this animal developed clinical signs and symptoms in accord with those of pellagra, and finally died. At necropsy no other causative factor for death, aside from the lesions found in fatal pellagra, was present. Microscopic study corroborated the gross findings, and the skin especially presented the hyperkeratosis and pigmentation identical with that found in the skin in human pellagra.

The experiment was not repeated until a similar typical, fatal human case became available. In this instance the ileum showed especially clear-cut lesions, presenting marked hyperemia, a mucous exudate and miliary ulcerations. These areas especially were selected and formed the greater part of the emulsion. Injections were given subcutaneously, intravenously and intracranially of a filtrate of this mixture procured through a Berkefeld No. N. Two months later this monkey was reinoculated in a similar manner and with similar materials. After two months of observation he developed a diarrhea, inflammation of the tongue, loss of appetite and presented erythematous skin lesions over the bridge of the nose, which spread in wing-like manner over the cheeks and under the eyes. He became emaciated and listless. Lesions, characterized especially by their symmetry of location and shape, developed on the conchae of both ears, the shoulders, arms and dorsal surfaces of the hands. These gradually became pigmented, assuming a deep brown color, and desquamation in scales and placques finally occurred. Across the neck, just on a line with the clavicles, a band-like lesion developed similar to those already described, and gradually merged into the lesions on the shoulders. The fact that the intestine formed the greater part of the filtrate used in this last experiment suggests the possibility that the stools may play some part in the transmission of the disease.

### New York Medical Journal

*November 8, XCVIII, No. 19, pp. 897-944*

96 *Dangers and Disadvantages of Spinal Anesthesia. W. W. Babcock, Philadelphia.
97 Preventive Medicine and Family Doctor. A. H. Wright, Toronto.
98 Surgical Experiences during Last Servian-Bulgarian War. R. J. Behan, Pittsburgh.
99 Case of Fracture of Pelvis in Child Aged Seven. P. G. Skillern, Philadelphia.
100 Infantile Paralysis Affecting Lower Extremities: Its Surgical Treatment and Possibilities of Cure. E. P. Magruder, Washington, D. C.
101 Conclusions Drawn from Freudian School. M. Solomon, Chicago.
102 Blood Ptosis. C. W. Crampton, New York.
103 Reflex or Protective Phenomena of Angina Pectoris. W. J. Pulley, New York.
104 Supplementary or Accessory Placenta. A. Sterling, Philadelphia.

96. **Spinal Anesthesia.**—In Babcock's experience ether and spinal anesthesia have been about equally dangerous, ether from exigencies compelling a profound narcosis or an imperfectly trained anesthetist; spinal anesthesia from an unwise selection of patients and an imperfect knowledge as to the physiologic action of the drug. With careless or unskilled use, Babcock says, spinal anesthesia is doubtless much more dangerous than ether. The morbidity of spinal anesthesia as expressed by nausea, vomiting, headache, backache, postoperative pain, and albuminuria is less than that from ether. Ocular palsy may result from spinal anesthesia where contaminated or deteriorated solutions are used. A lateral deviation of the needle with injury to a nerve root may be followed by severe neuritis and secondary palsy. Secondary degeneration of the spinal cord from the chemical action of stovain, properly introduced in human beings, for purposes of spiral anesthesia is doubted.

Functional or neurotic symptoms occur after spinal anesthesia as they do after etherization, and may, to the annoyance of the surgeon, be attributed by the patient to the injection. If a steel needle be used it may be broken under the skin during the injection. Danger symptoms may follow if the patient be moved immediately after the injection or if the proper posture to prevent the anesthetic from reaching the upper nerve roots be not maintained for at least one-half hour after the injection. Repeated intradural injections seem to be harmless. Babcock warns that spinal anesthesia is dangerous in circulatory subtension, conditions greatly depressing the respiratory centers, and shock, collapse, advanced myocardial disease, and large intrathoracic effusions. It is more dangerous for operations on the upper abdomen than those on the lower. It does not obviate the danger of sudden cardiac arrest in operations for large uterine fibroids.

Babcock insists that the newer methods of anesthesia, including spinal anesthesia, nitrous oxid oxygen, intravenous anesthesia should have their use restricted to selected patients by those who have properly qualified themselves. If the patient cannot be properly watched for one hour after the injection, if the operator does not understand the dose and mode of diffusion of the drug, or if he is unprepared to meet emergencies, then spinal anesthesia should not be employed For general indiscriminate use ether remains the standard anesthetic despite its many drawbacks.

### Philippine Journal of Science, Manila

*June, VIII, No. 3, pp. 157-252*

105 *Intestinal Parasites Encountered in 500 Autopsies, with Report of Cases. B. C. Crowell and R. W. Hammack, Manila.
106 Beriberi-Preventing Substances or Vitamines Contained in Rice Polishings. E. B. Vedder and R. R. Williams, Manila.
107 Biology of Tabanus Striatus Fabricus, Horsefly of Philippines. M. B. Mitzmain, Manila.
108 Mechanical Transmission of Surra by Tabanus Striatus Fabricus. M. B. Mitzmain, Manila.
109 *Axillary Teratoma. P. K. Gilman, Manila.
110 Strangles in Philippines. W. H. Boynton, Manila.
111 Influence of Atmospheric Temperature on Spread of Pneumonic Plague. O. Teague, New York.

*August, VIII, No. 4, pp. 253-330*

112 Experimental Entamebic Dysentery. E. L. Walker and A. W. Sellards, Manila.

105. **Intestinal Parasites.**—In a series of 500 consecutive necropsies on people of all ages in Manila, *Ascaris lumbricoides* occurred in 41.2 per cent., *Trichuris trichiura* in 34.4 per cent., hookworm in 16.6 per cent., *Taenia saginata* in 0.2 per cent., *Cysticercus cellulosae* in 0.2 per cent., *Oxyuris* in 1 per cent., *Clonorchis sinensis* in 0.4 per cent., *Schistosoma japonicum* in 0.2 per cent., malaria in 5 per cent., and amebic colitis in 5 per cent. The manifestations of ascariasis have been the presence of ascaris in the liver as the result of both antemortem and post-mortem wanderings, and its possible action as the exciting factor in one case of widespread hemorrhages. One clinical case of *ascaris* in the appendix has been encountered. *Ascaris* has not been found less frequent in febrile than in other cases. Trichuriasis occurred in 33.9 per cent. of the males and 35.4 per cent. of the females; 15.53 per cent. of the patients under 15 years of age and 40.1 per cent. of the patients above that age harbored *trichuris*. Two clinical cases of appendicitis in which *trichuris* was found in the appendix have been encountered. One case has been described exemplifying the frequently encountered hemorrhages in the submucosa of the intestine associated with the presence of the hookworm. One *Taenia saginata* was the only tapeworm encountered. The infrequence of *Taenia solium* in human cases as compared with the great frequence of *cysticercus* in hogs in the Philippines has been deemed noteworthy. One case of *Cysticercus cellulosae* in the human cadaver has been reported in detail.

109. **Axillary Teratoma.**—In Gilman's case, a swelling was noted under the right arm shortly after birth. This swelling increased slowly but steadily in each diameter. At the age of 7 the patient had a slight fever and the tumor became red and increased noticeably in size. At that time, occupying the right axilla and limiting considerably the movements of the

arm in all directions was a tumor measuring about 12 cm. in diameter, with a general spherical form. The growth as a whole was soft and elastic and movable, although evidently attached to the apex of the axilla and upper portions of the chest wall; was not tender nor painful. The skin over the mass was more or less adherent in several linear areas, one of these on the external surface being reddened and inflamed. The vessels of the skin over the growth showed great distention and considerable venous stasis. The tumor evidently contained fluid under the considerable tension, and over the posterior portion of the wall of the cyst gave a sensation as though considerable fibrous thickening had taken place with probably a deposition of some mineral salts. It was removed. The growth shelled out readily over nearly the entire surface, difficulty being experienced only in the apex of the axilla where the artery, several branches of the vein, and most of the nerve branches were enveloped in the fibrous capsule of the cyst and over the fifth rib, the periosteum of which was intimately connected with the wall. A small portion of the fluid of the cyst was aspirated immediately after the specimen was received, and was seen to be clear and yellowish in color. The pathologic examination showed it to be a teratoma of mesodermal origin or autochthonous monophyllic teratoblastoma of mesodermal origin.

### Public Health Journal, Toronto

*October, IV, No. 10, pp. 541-588*

113 Disposal of Sewage and Garbage. J. W. S. McCullough, Toronto.
114 Harbor of Indifference. G. D. Porter, Regina, Sask.
115 Sanitary Surveys of Rivers. J. R. Malek, Regina, Sask.
116 Relation of Social Survey to Public Health Authorities. F. Schneider, New York.
117 Leaves from Inspector's Note Book. H. D. Mathias, Regina, Sask.
118 Charities and Corrections. J. E. Starr, Toronto.

### South Carolina Medical Association Journal, Seneca

*October, IX, No. 10, pp. 268-298*

119 Extra-Uterine Full Term Operation; Recovery. R. T. Ferguson, Gaffney.
120 Wood Alcohol. C. W. Kollock, Charleston.
121 Tetanus Prophylaxis. G. A. Neuffer, Abbeville.
122 Medical Inspection of Schools. T. Maddox, Union.

### Southern Medical Journal, Nashville, Tenn.

*November, VI, No. 11, pp. 705-762*

123 Recent Advances in Methods of Administration of General Anesthetics. C. H. Cocke, Asheville, N. C.
124 Endometritis. W. F. Shallenberger, Atlanta, Ga.
125 Relation of Physician to Future Generations. E. A. Rowland, Shawnee, Okla.
126 Drugging Habit of Busy Practitioner. B. B. Simms, Talladega, Ala.
127 Work of County Health Officer in Alabama. R. M. Davis, Florence, Ala.
128 Cardioptosis—Report of Case. P. T. Fleming, Enterprise, Ala.
129 Propagation of Tertian Malaria in Mountains of North Carolina, Henderson County in Particular. W. B. Howe, Hendersonville, N. C.
130 Plea for Prevention of Disease. Nature's Law—Survival of Fittest. C. G. Roehr, Fort Pierce, Fla.
131 Paper Clip in Trachea—Successful Removal. R. McKinney, Memphis, Tenn.
132 Bone and Joint Cases. M. Hoke, Atlanta, Ga.
133 Open Treatment of Fractures. H. P. Cole, Mobile, Ala.

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## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

*October 25, II, No. 2756, pp. 1049-1124*

1 History of Invention and Discovery of Spectacles. G. H. Oliver.
2 Influence of Time on Red Glass. C. H. Würtzen.
3 *Operation for Inducing Artificial Pneumothorax. H. deC. Woodcock.
4 Case of Influenzal Meningitis. A. Ross and A. E. Moore.
5 *Effects of Emetine on Abscess of Liver. R. L. Spittel.
6 Hemorrhage in Newborn Infant. S. D. Clippingdale.
7 Diagnosis and Treatment of Primary Carcinoma of Stomach. G. H. Makins.
8 Experimental Observations on Cause of Death in Acute Intestinal Obstruction. D. P. D. Wilkie.
9 *Radium and Inoperable Cancer. A. A. Warden.
10 Chronic Interstitial Enteritis. T. K. Dalziel.
11 Diagnosis and Treatment of Injuries of Knee-Joint Other than Fractures and Dislocations. A. M. Martin and A. J. Walton.
12 Treatment of Compound and Comminuted Fractures. E. W. H. Groves.
13 Prostatism—Pathologic Basis of Operative Treatment. H. Wade.
14 Neuralgia of Twelfth Dorsal Nerve Simulating Visceral Lesions. T. K. Dalziel.
15 Surgical Treatment of Intestinal Stasis. H. J. Paterson.
16 Case of Retroperitoneal Fibroma, Weighing 34¾ Pounds, Successfully Removed. C. P. Childe.

**3. Operation for Inducing Artificial Pneumothorax.**—Woodcock has tried both puncture and the incision method, and prefers the puncture. The nitrogen is generated from the air as required, by means of a pyrogallate solution. It can be warmed by filling with hot water the bottle into which it is to pass; to maintain the heat a hot water jacket may be used. It is an additional precaution against sepsis to fill this bottle with a solution of hydrargyrum perchloridum, 1 in 5,000. The manometer is so constructed that it acts as a safety valve, allowing no greater pressure than 10 in. of water. It permits of direct communication with the patient, not merely through the nitrogen jar, so that the actual pressure within the pleura can from time to time be controlled.

**5. Effects of Emetine on Abscess of Liver.**—The noteworthy points of this case are: The cavity in the liver, which at the time of operation contained 1½ pints of pus, was found nine days later to have a capacity for only 4 ounces, while a very rapid advance of fibrosis was proceeding through a thickness of tissue that measured ¾ inch. Several separate foci of pus had been rendered inert and crystallized into solid, buff-colored islets, which disclosed microsopically the very beginnings of fibrosis. More evacuations of pus and local treatment could not account for this latter phenomenon, even if they did for the former.

**9. Radium and Inoperable Cancer.**—Warden's conclusions are as follows:

1. Simple obstruction of the intestinal lumen must be clearly distinguished from strangulation. In the latter, death ensues long before the obstruction to the onward passage of intestinal content has become a factor of importance. 2. Simple obstruction high up in the intestine differs from that lower down, chiefly in the great loss of intestinal secretions by vomiting in the former, compared with the latter, where the secretions are reabsorbed above the obstruction. 3. Absorption of poisons from the content of the obstructed intestine is not the leading factor in producing the symptoms of acute ileus. 4. The danger of allowing the content pent up above an obstruction to flood the empty intestine below has probably been exaggerated. 5. Peritonitis plays no part in causing death in the majority of cases of simple intestinal obstruction; in cases of strangulation, however, it may undoubtedly be a factor in the later stages. 6. In all varieties of intestinal obstruction the bowel content is infective. 7. Splanchnic paresis with depletion of the systemic circulation is the main factor in producing the symptom-complex of acute intestinal obstruction. In treating this factor, besides the operative relief of the obstruction, copious subcutaneous infusions of saline and dextrose solutions are of immense value. Clinically, the administration of pituitrin is found to be a valuable adjuvant. 8. The prompt relief given by enterostomy in cases of simple obstruction of the small intestine in the human subject is to be explained, not so much by the relief from toxic absorption as by the breaking of a vicious circle, the intestinal distention causing a paresis of the splanchnic vessels, and vice versa. By relieving the intestinal distention the splanchnic vessels are allowed to regain their tone, and the depletion of the systemic circulation is arrested. 9. The operative treatment of intestinal obstruction should be as conservative as possible; only on imperative indications should the intestinal lumen be opened. The danger of a postoperative peritonitis from the slightest soiling is much greater than that of toxic absorption from a loaded bowel.

### Clinical Journal, London

*October 1, XLII, No. 26, pp. 401-416*

17 Nephroptosis: Its Clinical Significance. W. Billington.
18 Glycosuria. W. L. Brown.
19 Metastasis of Lung Secondary to Sarcoma Uteri Simulating Pneumonia. T. M. Martin.

*October 8, No. 27, pp. 417-432*

20 Cause and Treatment of Traumatic Ventral Hernia. W. M. Eccles.
21 Carcinoma of Stomach. A. J .Walton.

*October 15, No. 28, pp. 433-448*

22 *Roentgenoscopy of Aneurysm of Thoracic Aorta. M. R. J. Hayes.
23 Significance of Chronic Cough and Wasting in Childhood. E. B. Smith.
24 Surgical Cases. E. M. Corner.

*October 22, No. 29, pp. 449-464*

25 Clinical and Pathologic Results of Infection of Female Genitalia. F. J. McCann.
26 Pulmonary Triad: Bronchitis, Asthma and Emphysema. W. Calwell.
27 Brachial Pressure Neuritis due to Normal First Thoracic Rib: Its Diagnosis and Treatment by Excision of Rib. J. Morley.

### Journal of Tropical Medicine and Hygiene, London

*October 15, XVI, No. 20, pp. 77-328*

28 Some Experiences of Mountain Sickness in Andes. T. H. Ravenhill.
29 Distribution of Glossina Longipennis (Corti, 1895). A. J. Chalmers and H. H. King.

### Lancet, London

*October 25, II, No. 4704, pp. 1162-1234*

30 Causes and Symptomatology of Impaired Retinal Activity. G. A. Berry.
31 *Symmetrical Necrosis of Cortex of Kidneys. H. D. Rolleston.
32 Effect of Altitude on Blood-Volume. G. Dreyer and E. W. A. Walker.
33 Veronal Poisoning. W. H. Willcox.
34 *Clinical Study of Chief Function of Peritoneum. J. Howell.
35 *Experimental Transmission of Disseminated Sclerosis to Rabbits. W. E. Bullock.

31. **Necrosis of Cortex of Kidneys.**—To the ten cases of symmetrical necrosis of the cortex of the kidneys reported in the literature Rolleston adds the eleventh case. The ages of these eleven patients varied between 22 and 48 years. Nine were multigravidae, one was a primipara, and in one case there was no statement. In one case only was there a live birth and in that instance there were live twins. The exception to the statement that symmetrical necrosis of the renal cortex is a puerperal manifestation is that in very rare instances embolic infarction may be so extensive as to produce this anatomic lesion.

The clinical features are remarkable in resembling in the main those of calculous obstruction of both ureters rather than those usually regarded as characteristic of non-obstructive anuria. Uremic manifestations were absent in some of the reported cases and when present were usually comparatively slight. Dyspnea occurred in three cases. Convulsions are recorded in six cases. But in two out of these six cases the convulsions occurred only before the uterus was emptied and therefore cannot be so distinctly correlated with the anuria as in the other four cases. In two cases convulsions occurred after delivery; in one case both before and after delivery. Of the five cases in which convulsions did not occur the kidneys were previously healthy in three, showed endarteritis without renal fibrosis in one and chronic nephritis in one. Of the six cases in which convulsions occurred the kidneys were previously healthy in two; in one case—a woman of 22, in whom twelve fits occurred before delivery, there was very slight endarteritis only, and in the remaining three cases there was no change. Anuria is a striking feautre in nearly all these cases.

The morbid lesions are remarkable in showing symmetrical necrosis of the renal cortex with thrombosis of the renal vessels supplying the cortex, usually of the interlobular arteries in the middle zone of the cortex. In some of the cases there was a narrow rim of unaltered cortex immediately under the capsule. Its escape appears to depend on the anastomosis between the arteries in the capsule of the kidney and those supplying the perirenal fat, and resembles the condition often seen in ordinary embolic infarction of the kidney.

34. **Chief Function of Peritoneum.**—Recognizing the fact that the chief function of the peritoneum is to combat bacterial invasion. Howell suggests that the symptoms of typhoid are due to the infection of the peritoneal cavity by the *Bacillus typhosus*, the sloughing Peyer's patches being marks of their disputed but victorious passage. A boy's bilious attack, he claims, is due to peritoneal infection, also the summer diarrhea of children. Some of the cases of "vicious circle" after gastrojejunostomy are instances of septic peritonitis. Some of the failures of gastrojejunostomy are due to the fact that the operation has been performed, not on account of organic pyloric obstruction or gastric or duodenal ulceration, but in cases of chronic infection of the peritoneal cavity, the source of which was not found; the poison therefore continuing, the liver and stomach continued their necessary work of excretion. The abdominal incision and manipulation of the viscera, by temporarily draining the peritoneum and causing a fresh sharp effusion of serum, ensured them a short respite. The liver and stomach, he continues, by no means escape themselves scot free in the performance of these vital duties. In cases of acute infection the liver cells, especially those in the outer part of the lobule, on which the greatest stress would fall, show fatty degeneration; in the more chronic forms they die out entirely, and their place is taken by fibrous tissue. Again, the muscular coats of the stomach, constantly bathed in toxic lymph passed into it by the visceral endothelium, would gradually become atonic, causing a chronic dilatation of the organ; sometimes this lymph would actually contain organisms which the peritoneum and omentum had imperfectly dealt with, and these again, during the time that they found themselves in the submucous tissue, would produce necrosis, and begin the mischief of ulceration. In cases of still greater stress on the peritoneum, as in some cases of puerperal fever, ruptured gangrenous gall-bladder, etc, the organisms set up a general condition of acute phlegmonous gastritis.

35. **Transmission of Disseminated Sclerosis.**—*Bullock* has succeeded in producing paralysis of the limbs in four rabbits out of five by injecting cerebrospinal fluid, withdrawn under rigidly aseptic conditions from a case of disseminated sclerosis, subcutaneously into rabbits. The fluid was found to be potent after exposure to a temperature of 0 C. for fourteen days, and after being filtered through unglazed porcelain. Histologic examination of the spinal cord revealed a complete reproduction of the appearances found in the human subject, viz.: (1) vascular engorgement and fragmentation of the myelin sheath in the early stages; (2) areas of degeneration throughout the cord, demonstrable by the Marchi and Weigert-Pal methods, in the latter stages of the disease. Whether the cerebrospinal fluid obtained from a second case of the disease would have produced paralysis in two wild rabbits or not could not be determined owing to the premature death; in the case of the other two animals the fluid was not potent in producing paralysis. A cat which was inoculated with fluid obtained from the first case remained active and healthy for nine weeks.

If, Bullock says, one assumes that disseminated sclerosis is a definite entity and that the first patient from whom cerebrospinal fluid was obtained was an instance of the disease, one is bound to conclude that the cause of the disease is either a virus (organism) or a water-soluble poison found in the cerebrospinal fluid. While the final demonstration of the first conclusion is not yet obtained the balance of probability lies in its favor. Thus the fact that paralysis occurs from fourteen to twenty-one days after inoculation is fairly strong evidence against a non-living poison. Against all this, however, must be placed the possibility that the disease called disseminated sclerosis is not individual, but that it may be a symptom-complex which may be produced by two or more causes. The fact that the cerebrospinal fluid obtained from the second case failed to cause paralysis in four wild rabbits lends some support to this possibility. One must, however, attach some importance to the fact that wild rabbits were used in these experiments, whereas tame ones were employed in the first.

### Archives des Maladies du Coeur, Etc., Paris

*October, VI, No. 10, pp. 625-688*

36 Retrograde Extra Systoles of the Ventricle. L. Gallavardin.
37 Operative Release of the Pericardium. (De la péricardiolyse dans certaines affections cardiaques ou de la thoracectomie prépéricardique.) H. Delagenière.
38 [illegible] in Polycythemia. (Maladie de Vaquez.) [illegible]
39 [illegible] Marotte and Morvan.

### Bulletin de l'Académie de Médecine, Paris

*October 7, LXXVII; No. 30, pp. 181-636*

40 *Subintrant Angina Pectoris. (Les crises d'angine de poitrine subintrantes.) C. Fiessinger.
41 General Spinal Anesthesia. Jonnesco.

40. See Paris Letter in The Journal, November 1, p. 1642.

### Journal de Médecine de Bordeaux

*October 12, LXXXIV, No. 41, pp. 655-668*

42 *Malformation of the Soft Palate. (Insuffisance vélo-palatine.) E. J. Moure.
43 Sporotrichosis of the Hands. Petges.

*October 19, No. 42, pp. 669-684*

44 Polyuria. Lauret.

42. **Malformation of the Soft Palate.**—Moure warns that one is liable to do more harm than good by any operation or direct procedure to remedy congenital malformation of the soft palate. The best treatment is by training the child to make the best use of his speech apparatus. Systematic training by an expert in this line is liable to cause great improvement, especially when supplemented by a few applications of massage to the parts as after staphylorrhaphy.

### Lyon Chirurgical, Lyons

*July, X, No. 1, pp. 1-108*

45 *Non-Cancerous Stenosis of the Colon at the Sigmoid Flexure. A. Cade and others.
46 Woody Phlegmon Partially Encircling the Kidney. (Phlegmon péri-néphrétique ligneux.) L. Thevenot.
47 Technic for Exclusion of Pylorus or Duodenum. R. Leriche.

*August, No. 2, pp. 109-220*

48 *Transplantation of the Kidney. E. Villard and E. Perrin.
49 *Inguinal Access to Hydrocele. V. Gomoiu.
50 Carrel's "Visceral Organism." R. Leriche.

45. **Non-Cancerous Stenosis of the Colon.**—In the case described the symptoms were those of Hirschsprung's disease in a woman of 75, but necropsy disclosed merely stenosis from old inflammatory lesions, possibly tuberculous. True Hirschsprung's disease involves congenital malformation of the colon.

48. **Transplantation of Kidneys.**—Villard and Perrin give an illustrated description of the findings in three dogs after transplanting one of the animal's kidneys to some other point. The operation proved a success in only one instance; the left kidney had been transferred to the neck and connected with the primary carotid artery and the external jugular vein with the ureter sutured to the skin. The kidney kept up its functioning but showed signs of mild inflammation when the animal was killed two months later. It had evidently become infected through the ureter from the skin. A kidney from other dogs was transplanted into the animal in nine other experiments. The results at first were excellent, the kidney functioning nearly normally, but the implanted kidney was absorbed in time or it sloughed away. Attempts to transplant a kidney from a cat to a dog, goat to dog, etc., invariably failed.

49. **Treatment of Hydrocele.**—Gomoiu has applied with excellent and permanent results in twenty-five cases a method of treatment utilizing the inguinal canal. This leaves the scrotum intact and acts exclusively on the direct seat of the lesion in question while the conditions for healing afterward, he says, are ideal. It is easy to work the top of the tumor up into the incision in the inguinal region, evacuate it and evert or excise the vaginalis, and then push the testicle back into its place. It is not necessary to puncture through the scrotum first. He has operated by this inguinal route in fifty-three cases for varicocele, hydrocele, resection of the epididymis or castration. Phocas of Athens has also been using the inguinal route for two years to his constantly increasing satisfaction.

### Lyon Médical, Lyons

*October 12, XLV, No. 41, pp. 565-612*

51 Gas Cysts in the Intestines. F. Barjon and D. Dupasquier.

### Presse Médicale, Paris

*October 11, XXI, No. 83, pp. 825-836*

52 The Amino-Acids in Biology and the Clinic. L. Hugounenq.
53 Chronic Appendicitis Causing Limping and Mistaken for Right Hip-Joint Disease; Three Cases. (Appendicite claudicante ou coxopathie?) Rochard and Stern.

*October 15, No. 84, pp. 837-844*

54 Gastro-Enterostomy with the Jaboulay Button; Twenty-Eight Cases. A. Huguier and R. Simonnot.

### Revue de Chirurgie, Paris

*October, XXXIII, No. 10, pp. 537-680*

55 *Misplaced Normal Kidneys. (Reins ectopiques congénitaux non pathologiques.) F. Lejars and H. Rubens-Duval.
56 *Bending of the Radius (Radius curvus.) A. Binet and M. Mutel.
57 The Temperature in Tissues during Application of Superheated Air, Diathermia or Electrocoagulation. M. Grunspan.
58 *Operative Treatment of Vicious Ankylosis of the Knee. P. Brocq. To be continued.

55. **Congenital Misplaced Kidneys.**—Lejars and Duval discuss the mistakes in diagnosis for which a displaced kidney may be responsible when the anomaly causes no symptoms. They have encountered two such cases recently, the displacement of the kidney being unsuspected before the operation. In one the operation was done for torsion of a pedunculated fibroma in front of the uterus and a tumor found in front of the spine proved to be a kidney, somewhat atrophied and sclerous, which was safely removed with the fibroma below. In the second case the operation was done for ileus supposed to be the work of a neoplasm, but the growth seen on roentgenoscopy proved to be the kidney in the left iliac fossa, compressing the intestine. In other cases on record the displaced kidney interfered with menstruation or was the seat of pains during the menstrual congestion. In others the displacement of the kidney was masked by disease in the uterine adnexa. The main point in diagnosing is to bear in mind the possibility of a displaced silent kidney. In eleven cases on record the diagnosis was correctly made. The discovery of other malformations is an aid to the diagnosis of dystopic kidney. Also the discovery of a depression suggesting a hilus at some point in an abdominal tumor seen on roentgenoscopy, especially when pulsation can be palpated at this depression. There is always a possibility that a tumor may prove to be a supernumerary kidney, such as MacArthur has reported. Other aids in diagnosis are the difference in the depth to which the ureter catheters can be introduced, and the albuminuria and red corpuscles found in the urine half an hour after the "tumor" has been palpated and lightly kneaded; if there has been preceding albuminuria, it is increased under this. This increase two, three or eleven-fold in the albuminuria permitted recognition of the misplaced kidney in four cases in Fedoroff's service at St. Petersburg. If the kidney is atrophied and sclerous and the existence of an apparently sound mate is determined, nephrectomy can be done at once when the displaced kidney is encountered as an operative surprise. But under other circumstances it is better to postpone the nephrectomy until the functional capacity of the other kidney can be ascertained. In three cases on record necropsy showed that there was no second kidney.

56. **Bending of the Radius.**—Binet and Mutel give an illustrated description of a case of radius curvus and expatiate on the ease, simplicity and perfect results of operative correction of the deformity when the bone is cut across slanting and forcibly straightened. The correction is maintained by a plaster gauntlet, the hand turned toward the ulna, the thumb upward, with extreme extension of the hand on the wrist. If these points are observed the deformity can be corrected without shortening of the arm.

58. **Operative Treatment of Crippled Knee.**—This instalment of Brocq's long article discusses ankylosis of the knee with flexion, and means to correct the deformity without attempting to put an end to the ankylosis. Various other forms of crippling of the knee are also discussed and the attempts on record of grafting whole joints. Fifteen illustrations accompany this part of the monograph.

### Archiv für Gynäkologie, Berlin

*C, No. 3, pp. 455-862., Last indexed Oct. 11, p. 1310*

59 *Disinfection of the Vulva during Labor Reduces Germ Content of the Puerperal Uterus. L. Leidenius.
60 Nitrogen Extractives in the Uterine Muscle. (Extraktivstickstoff in der glatten Muskulatur des Uterus.) A. F. v. Winiwarter.
61 Management of Later Puerperium. (Klinische Untersuchungen zur Beurteilung des Spätwochenbettes, mit bes. Berücksichtigung des Einflusses des Frühaufstehens.) L. Knapp.
62 Laceration of Umbilical Cord. (Nabelschnurzerreissung intra partum.) O. Nebesky.
63 Experimental Research on Action on Genital Organs of Extracts Made from Placenta and Female Genital Organs. O. Fellner.

59. **Local Disinfection of Parturient.**—Leidenius devotes over seventy-five pages to the account of his experiments and experiences at Helsingfors, with tabulated details of conditions in fifty cases in which the child was born without any attempt at disinfection and six other groups in which various methods were applied. The impression from the total 150 cases is decidedly in favor of efficient disinfection. The ordinary methods in vogue do little good, but if the vagina is rinsed out with boiled water and a weak disinfectant and the vulva is shaved and painted with tincture of iodin, the danger of infection later is materially reduced. Prophylactic vaginal

douches are particularly useful when they can be applied with aseptic technic.

### Archiv für Verdauungs-Krankheiten, Berlin

*October, XIX, No. 5, pp. 501-662*

64 *Perforated Diverticulum in the Esophagus. F. Egle.
65 *Percussion of the Liver (Zur perkutorischen Untersuchungsmethode der Leber.) W. Orlowski.
66 *Multiple Cancer of the Intestines. E. v. Muralt.
67 *Ichthyol for Lavage of the Stomach. (Verwendung des Ichthyols zu Magen-Spülungen.) A. Conti.
68 *Estimation of Functional Capacity of the Pancreas. M. Lifschütz.
69 *Determination of Free Hydrochloric Acid in the Stomach without the Stomach Tube. (Beiträge zur Untersuchung des Mageninhalts ohne Sonde.) H. Friedrich.

**64. Perforation of Esophagus Diverticulum.**—In the two cases reported by Egle, the diverticulum had evidently developed from traction by shriveling processes in the mediastinum. In each instance the diverticulum developed in the anterior wall of the esophagus above the bifurcation and caused no symptoms of any kind until perforation occurred, entailing suppuration in the mediastinal tissues, resulting in purulent pericarditis in one case and in perforation of the trachea and aspiration pneumonia in the other, both fatal. In the latter case there was a cancer at another point in the esophagus which suggests that possibly the cancer may have originated in another diverticulum not recognized at necropsy.

**65. Percussion of the Liver.**—Orlowski calls attention to the instructive findings possible when threshold or orthopercussion is applied to the liver, that is, percussing so lightly that the findings are just at the threshold of audibility. The percussion is done in the sagittal direction. He has thus examined the liver in 288 men and 212 women, applying the percussion about 1,200 times in all. In 892 investigations, the lower margin of the liver as thus outlined corresponded with the palpation or operation findings in 83.5 per cent. of the cases. The percussion was applied in connection with other diagnostic measures. The various factors, such as filled bowel, etc., liable to interfere with the percussion findings are discussed.

**66. Multiple Cancers in Boy.**—The boy of 13 had had symptoms four years before which suggested tuberculous peritonitis at the time. Later ileus developed and the boy died from increasing weakness the second day after the operation. Necropsy revealed several cancers in the intestines, the largest in the ascending colon, the ileum and jejunum studded with about forty nodules; all the growths were typical cylinder-celled cancer.

**67. Advantages of Ichthyol for Rinsing Out the Stomach.**—Conti has been using for ten years a 10 per thousand solution of ichthyol for rinsing out the stomach in case of gastritis or malignant disease, and has found the results very satisfactory. He poured the fluid into the stomach and left it there for fifteen to twenty-five or thirty minutes, leaving the stomach-tube in place in the meanwhile. The patients displayed a surprising tolerance for it, and the toxic coefficient of the stomach content was materially modified by the ichthyol, as he explains in detail.

**68. Tests of Functional Capacity of the Pancreas.**—Lifschütz applied various tests to forty-two persons to determine the functional capacity of the pancreas, and devotes over forty pages to description of the findings and the lessons to be learned therefrom. The findings in the stool were more instructive and reliable than those in the gastric juice after an oil test-breakfast, but the best plan is to combine the two methods. Negative response to the casein digestion test applied to the stool is more instructive than a positive result, as erepsin and certain bacterial ferments are able to digest casein to some extent. Vigorous digestion of casein by stool extract is strong testimony in favor of normal functioning on the part of the pancreas. He found no essential difference between the action on albumin of trypsin, erepsin and certain bacterial ferments—all of these digest casein, but erepsin has no action on egg albumin.

**69. Examination of Stomach Content Without the Stomach-Tube.**—Friedrich's method of testing conditions in regard to acidity in the stomach by means of a swallowed medicated thread, was described in THE JOURNAL, Sept. 14, 1913, p. 911. He here states that time has confirmed the simplicity and reliability of the method, and has shown further that it is possible by this means to detect the presence of catarrh of the stomach by the irregular staining of the thread. When merely the tip of the thread is stained, this indicates excessive motor functioning, as it shows that there is but little content left in the organ. Irregularity in the staining shows that the stomach contents have not been thoroughly mixed, or else that the stomach contents are mixed with mucus.

### Berliner klinische Wochenschrift

*October 13, L, No. 41, pp. 1881-1928*

70 *Bubonic Plague and Rat Fleas. (Wichtigkeit des "Rattenflohes" zur Feststellung der Verbreitung von Pest.) S. Kitasato.
71 Paralytic Dementia and Syphilis. H. Noguchi (New York).
72 Tardy Suppuration after Appendicitis. E. Melchior.
73 Chronic Deficiency in Hydrochloric Acid. (Therapie der chronischen Anacidität.) M. Hirschberg.
74 Electrotherapy of Pathologic Blood-Pressure. F. H. Humphris (London).
75 Lymphuria and Its Clinical Standing. H. Stern.
76 *Eclampsia Four Times. (Viermaliges Auftreten der Eklampsie bei derselben Patientin.) C. Holste.
77 Abderhalden's Serodiagnosis of Pregnancy. F. Ebeler and E. Lohnberg.
78 Physiotherapy of Functional Vocal Cord Disturbance. T. S. Flatau.
79 Research on Rabbit Heart. (Einfluss experimenteller Verletzungen des Conus arteriosus dexter, wie des rechten und linken Vorhofes auf die Kurve des Elektrocardiograms bei Kaninchen.) M. Tschernorutzky.
80 Test for Iodin in the Urine. J. Becker.
81 *Possible Dangers of Mercurial Treatment. (Die Gefahren der Quecksilberkuren und ihre Verhütung.) W. Wolffenstein.

**70. The Rat Flea in Transmission of Plague.**—Kitasato confirms the efficacy of the method of collecting rat fleas by turning guinea-pigs loose in the infected buildings. At Kobe 3,376 guinea-pigs were thus turned loose for twenty-four hours in 774 houses, warehouses, ships, etc., in a period of seventeen months after the small epidemic of plague there in 1909. He emphasizes the importance of the rat fleas in the transmission of plague and the advantages of this method of detecting infection of the fleas. The findings were particularly instructive in forty-two houses which had been supposedly thoroughly disinfected after cases of plague. In eleven of forty-two houses of this kind the guinea-pigs collected infected fleas, showing that the disinfection had not been complete. In thirty-six other houses all the rats had been exterminated and the buildings made absolutely rat-proof; 122 guinea-pigs were turned loose in these houses, but only one flea was found and this showed no signs of infection. Building the rats out is thus shown to be the most effectual means of rooting out the plague.

**76. Recurrence of Eclampsia.**—Holste's patient was an otherwise healthy woman who developed eclampsia near term at her second pregnancy, at the seventh month of the second, at the fourth month of the third pregnancy and just before delivery at the fourth. During the last pregnancy the urine was examined repeatedly for albumin, always with negative results, and she seemed in perfect health. Then the eclampsia developed, extremely severe, but it gradually subsided after the fifty-first convulsion. No influence on the convulsions was noted from the forced delivery but they gradually subsided the following day. With the first eclampsia the convulsions ceased after forced delivery. The second time Stroganoff's prophylactic method was applied with perfect success. At the third appearance of the eclampsia this treatment failed completely, and only forced delivery brought a turn for the better. The fourth attack persisted unmodified by the Stroganoff method and also by forced delivery. The patient succumbed to pneumonia after the subsidence of the eclampsia. Nothing was found to explain the peculiar features of this case; no signs of chronic inflammation of any organ.

**81. Possible Dangers of Mercurial Treatment.**—Wolffenstein has found records in the literature since 1883, of 108 fatalities from the use of mercury. In only one case had the mercury been given by the mouth—fatal intoxication from five pills of 0.06 gm. mercury each. One fatality followed inhalation of the mercury by Welander's sack method. Nine deaths are credited to mercurial oil *(Merkuriolöl)* and ten to mercuric salicylate; in one of the latter group there must have been an absolute idiosyncrasy, as a single injection of 0.05 gm. proved fatal. Seven fatalities are recorded from injection of the soluble preparations and seventy-eight from the insoluble. No less than thirty-one of the fatalities occurred with grey oil, and nineteen with inunctions. He emphasizes the importance of examining the urine before starting a course of mercurial treatment, and repeating the examination *once a week* at least during the course. The various forms in which mercurial intoxication can be manifested are discussed and a case of gangrene of the vagina from this cause is reported, the third on record. The mercury had been given subcutaneously, the salicylate and calomel in moderate doses to a low total. The patient was a young woman with the secondary phase of syphilis; stomatitis developed and the entire walls of the vagina sloughed off, with *fever, but final recovery*. Wechselmann has recently suggested that possibly some of the mishaps attributed to salvarsan were in reality the work of the mercury given with or before it.

### Correspondenz-Blatt für Schweizer Aerzte, Basel

*September 20-27, XLIII, Nos. 38-39, pp. 1185-1248*

82 Mountain Climate in Treatment of Pulmonary Tuberculosis; Indications and Contra-Indications. H. Philippi and F. Egger.

*October 4, No. 40, pp. 1249-1280*

83 Digestive Incompetency in Two Children of 2 and 6. (Ueber schwere Verdauungsinsuffizienz jenseits des Säuglingsalters.) E. Wieland.

### Deutsche medizinische Wochenschrift, Berlin

*October 16, XXXIX, No. 42, pp. 2025-2072*

84 *Present Status of Rabies. (Lyssaforschung.) J. Koch.
85 *Abderhalden's Serodiagnosis in Psychiatry. R. Bundschuh and H. Roemer.
86 True Tubercle Bacilli not Often Present in the Blood. C. Moewes and F. Bräutigam.
87 *Tubercle Bacilli in Skin Tuberculosis. (Nachweis von Tuberkelbazillen bei Tuberkulose der Haut, bes. des Gesichts.) C. Stern.
88 *Degeneration of the Liver during Pregnancy. P. Heinrichsdorff.
89 *Latent Erysipelas and Toxic Eczema. F. Berger.
90 Patent Botalli's Duct; Three Cases with Necropsy. K. Motzfeldt.
91 Roentgenoscopy of Bones and Joints as Aid in Orthopedic Surgery. G. F. Haenisch.
92 Psycho-Analysis. (Beitrag zur Freudschen Psychoanalyse.) P. Engelen.
93 The Alleged Ritual Murder at Kiev and the Medical Expert Testimony. E. Zienke.

84. **Rabies.**—Koch concludes his review of the fifteen years of work of the rabies department of the institute for infectious diseases at Berlin with the statement that possibly potassium iodid might be useful in prophylaxis and treatment of rabies, as it is in syphilis. He refers especially to the cases in which the virus has lurked silently in the body for weeks, months or years, and finally rouses to bring on the rabies in a pronounced form. Nothing is known *that will neutralize* the rabies virus, but he thinks that potassium iodid may influence the tissues of the central nervous system so that they will no longer have an affinity for the virus. This is the explanation, he is *convinced*, of the efficacy of potassium iodid in syphilis; it modifies the tissues that have become pathologic under the influence of the spirochetes and thus renders the medium unfavorable for their growth. Both theory and practice sustain the wisdom of giving potassium *iodid in* rabies, and he has been applying it in this way for nine months as adjuvant to the ordinary inoculation treatment of rabies. Every person taking the Pasteur treatment is given a tablespoonful or dessertspoonful of a 4 to 200 solution of potassium iodid, and thus takes three or four bottles during the course. Therapeutic experience with potassium iodid in actinomycosis, etc., justifies its use in this way. In three cases of abortive rabies all the symptoms rapidly subsided under *it, contrary* to what is usually observed in such cases. A course of potassium iodid after the Pasteur treatment and again during the year might also have a tranquillizing effect on persons who have been bitten by an animal. He warns in regard to the influence of a trauma, overfatigue, emotional stress or abuse of alcohol in rousing the slumbering virus to bring on the disease; it is *now* established beyond question that the virus *can* be present in the nerve tissue without causing any manifestations until something occurs to arouse it to malignant action.

85. **Serodiagnosis in Mental Disease.**—Bundschuh and Roemer applied Abderhalden's technic *to nine* healthy persons, to nine with *manic-depressive* insanity, forty-one with dementia praecox, thirteen with progressive paralysis. Their serum was tested for digestion of brain cortex tissue, thyroid, kidney and ovary or testicle tissue. The results confirmed the specific nature of the ferments elaborated in these various conditions; constantly negative *in* the controls, serum from the dementia cases digested cortex tissue in thirty-five, sexual glands in thirty-four, and thyroid in fourteen cases. The thirteen with progressive paralysis all gave a negative response to thyroid tissue and ten to testicle tissue, but the response was positive with cortex tissue in eleven, *to* testicle tissue in *ten, to both in two, and to* cortex tissue in two. His findings thus testify to the specific character of the defensive ferments elaborated in these forms of mental disease.

87. **Tubercle Bacilli in Lupus Lesions.**—Stern states that he found tubercle bacilli virulent for animals in the discharge from ulcerating lupus on the face in eleven of sixteen patients examined, *namely, in 68 per cent.* He suggests the danger of contagion of others from such persons and the necessity for prophylactic measures.

88. **Zone of Degeneration of the Liver in Pregnancy.**—Heinrichsdorff found necrosis in the center and in the middle zone of the liver in a woman who died the third day after induction of *premature delivery on account* of contracted pelvis. The aspect of the liver seemed normal; only when the liver was opened was the zone of necrosis discovered. The pregnancy had been *apparently normal.*

89. **Latent Erysipelas.**—Berger's patient suddenly developed *intensely itching follicular eczema* over the scalp, face, chest, neck and forearms; it spread the next day but then became stationary. The fifth day the picture changed to that of unmistakable erysipelas *which ran the usual course* and the eczema subsided with it. He declares that the eczema was secondary to the primary erysipelas which had developed in the depths but did not come to the surface until the fifth day. In a second case the eczema developed in the same abrupt manner, but the third day jaundice and other signs of catarrhal icterus developed. *In this case the eczema* was likewise of toxic origin, the first manifestation of the biliary *affection,* and it kept up until conditions righted themselves *in the bile* apparatus (*nine days*).

### Deutsche Zeitschrift für Chirurgie, Leipsic

*September, CXXIV, Nos. 5-6, pp. 431-628*

94 *Tuberculous Foci in Long Bones. (Die herdförmige Tuberkulose der grossen Extremitätenknochen mit bes. Berücksichtigung der metaphysären Lokalisation.) A. Oberst.
95 Etiology and Histogenesis of Primary Cancer of the Appendix. (Wurmfortsatzkrebs.) E. Schwarz (New York).
96 *Empyema with Operation; 118 Cases. T. Hirano.
97 Foreign-Body Tuberculous Peritonitis. (Zur Kenntnis der Fremdkörpertuberkulose des Bauchfells.) F. Kaspar.
98 *Horse Serum in Prophylaxis of Peritonitis. (Praktische Erfahrungen von Anwendung des Pferdeserums zur Resistenzvermehrung des Peritoneums gegen Infektion.) T. Hirano.
99 *Surgical Treatment of Ascites. E. Schwarzmann.
100 Surgery of the Esophagus. K. Omi and Z. Karasawa.
101 Cancer of Frontal Sinus. (Carzinom der Stirnhöhle.) K. Wisotzko.
102 Simple Practical Means for Artificial Respiration to Prevent Danger of Open Pneumothorax. Gelinsky.

94. **Circumscribed Tuberculous Lesions in Long Bones.**—Sixty illustrations accompany the text of Oberst's *article* which gives a general review of the subject, besides presenting his own experience. Each *location* is described on the basis of a few typical cases, with the clinical *picture* presented. In the *great majority* of cases the process starts in the metaphysis, only in the rarest instances in the shaft proper.

96. **Empyema.**—Hirano states that of the 118 patients with empyema given operative treatment at Ise, Japan, since 1900, ninety-three were children. Healing was not complete in adults under six months but the children healed up much faster. Twelve adults died and only eight were permanently cured, but 72 per cent. of the children were cured; 14 per cent. died. The outcome is not known in five other adults and in twelve of the children.

98. **Horse Serum to Enhance Resisting Power of Peritoneum.**—Hirano thinks that injection of horse serum may prove a valuable adjuvant in warding off or curing postoperative peritonitis and in peritonitis from any cause. He applied it in thirty-four cases and was amazed at the rapidity with which already installed peritonitis subsided after intramuscular injection of adults with 40 c.c. sterile horse-serum, children 20 c.c. No effect was apparent in a few cases.

99. **Operative Treatment of Ascites.**—Schwarzmann reports the outcome in fourteen cases of ascites in which operative treatment has been applied since 1906. The data presented emphasize the importance of excluding tuberculous peritonitis and cancer before doing any operation for ascites. Otherwise serious complications may follow. Incipient cirrhosis of the liver is the most promising field for operative treatment. For differential diagnosis the most important elements of the clinical picture are the preascites edema, frequent finding of blood in the stools, initial hematemesis, enlargement of the spleen and general symptoms. By heeding the above symptoms it may be possible to diagnose cirrhosis of the liver in an early phase so that prompt operative treatment may put an end permanently to the tendency to ascites.

### Medizinische Klinik, Berlin

*October 12, IX, No. 41, pp. 1663-1708*

103 *Diet for Forced Feeding and in Treatment of Obesity. (Ueber Mast- und Entfettungskuren.) K. Glaessner.
104 *Reinfection with Diphtheria. F. Reiche.
105 Course of Acromegaly. G. Hillel.
106 Intra-Abdominal Purpura in the Adult. G. Rosenow.
107 Seaside Sanatoriums. (Klimatophysiologische Beobachtungen an der Nordsee.) K. Häberlin.
108 *Mental Factor in Heart Murmurs. (Ueber psychische Herzgeräusche.) H. Bensch.
109 Relations between Diabetic Coma and Infectious Diseases. J. H. Siebelt.
110 *Contagiousness of Infectious Diseases. F. v. Szontagh. Commenced in No. 40.
111 Study of Influence of Carbonated Baths on the Circulation. Wybauw.

103. **Forced Feeding and Diet in Treatment of Obesity.**—Glaessner emphasies that when there is undernourishment the glycogen disappears first from the liver, muscles and organ cells, then the fat disappears from the cells, mostly from the subcutaneous tissue, muscles and glands. The proportion of loss is for fat, about 95 per cent.; muscles, lymph-nodes and blood, 40 or 50 per cent.; bone, 10 or 15 per cent. The lost albumin cannot be replaced by merely feeding albumin. The patient must have an appetite for his food and consequently change of air and scene, exercise in a pleasurable form, sports, and the preparation and seasoning of the food in an appetizing way are extremely important factors in forced feeding. Sometimes a complete change of diet, as change to an Italian menu, for example, or to sea foods, will answer the purpose. He does not approve of drugs, but advocates hydrochloric acid at need, "although not in the homeopathic doses generally employed." Condurango is also useful and arsenic, as the latter promotes metabolism of albumin.

Von Noorden estimates the normal weight by multiplying the height (in centimeters) by 480 gm. for the maximal and by 430 gm. for the minimal weight. Others estimate it by multiplying the height in centimeters above 100, by 1,000 gm. Oeder measures the distance between the top of the head and the symphysis, multiplies by 2, deducts 100, and multiplies the remainder by 1,000 gm. The undernourished should take about one-fifth more calories than the average for their weight. As a rule it may be said that the diet should include equal proportions of fat and protein with twice this proportion in carbohydrates. Glaessner says of the artificial foods on the market that there is nothing in the world so worthless that it may not be praised to the skies some day as an artificial food, adding that all the albumin-casein-lecithin preparations on the market can be tranquilly dispensed with in feeding the undernourished. He adds that it is disheartening to witness how medical men are willing to promote this advertising of artificial foods by throwing the mantle of science over them. These artificial foods are absolutely unfitted to take the place of foodstuffs; they are not only defectively utilized and merely load down the intestinal tract, but they lack that prime essential in diet, an appeal to the appetite. We can never emphasize strongly enough, he reiterates, the importance of comfort at meals and of appetizing preparation of the food.

In treatment of obesity, extremes should be avoided. Moderate amounts of albumin, carbohydrates of vegetable origin not readily digested, and small amounts of fat should be the basis for the diet, with saccharin instead of sugar. The water-supply need not be reduced. A tablespoonful of oil before meals aids in reducing gastro-intestinal secretion and thus retards digestion while it dulls the appetite. He advocates an occasional day of actual fasting. Physical exercise for the obese is far subordinate in importance to dieting. The restrictions in diet must generally be kept up throughout life. A course of strict dieting to reduce rapidly the obesity is by no means an indifferent matter; it makes great demands on the body as a whole and it is infinitely safer to regulate the habits so as to ward off the return of the obesity.

104. **Reinfection with Diphtheria.**—Reiche states that the records of the Hamburg hospital show 394 cases of diphtheria in the last seven years, in which there had been a preceding attack of the same disease in previous years. In the last two years, of the 4,761 diphtheria patients, 5.8 per cent. were known to have had a previous attack; the largest proportion, 10.9 and 15.8 per cent., were in young adults up to 25, and in adults between 25 and 50. In an additional 1.6 per cent., the second attack of diphtheria was evidently merely a relapse. The data presented confirm the absence of any immunization by a single attack of diphtheria. There were more cases of diphtheria at Hamburg in 1911 than at any time since 1895; 573 of the 4,761 cases in the last two years terminated fatally.

108. **Psychic Heart Murmurs.**—Bensch is convinced that heart murmurs are sometimes the effect exclusively of emotional or psychic influences. He reports twenty-four cases of the kind observed during a recent three months; the murmurs varied from time to time, alternating with normal findings. Vaquez calls them "office-examination murmurs," *souffles de consultation*. Bensch emphasizes as the special features of this group of murmurs their frequency; the exclusive location of the maximal sound in the second left interspace, close to the sternum, and only during systole—he never encountered them at any other point or during diastole; the changeability of the character of the murmur, the varying intensity of the murmur during the examination, during change of position or exercise, increasing in some and declining in others; loudest during deep breathing, and encountered in the delicate and pale and also in robust individuals. These murmurs in certain cases have led to far-reaching mistakes in diagnosis and in the making out of medical certificates, and he warns all to be on their guard with such phenomena in the left interspace. He reviews in conclusion the literature on the subject, although his latest citation from American sources dates from 1889.

110. **Contagiousness of Infectious Diseases.**—Szontagh relates that a child was visiting in a family where measles broke out a few days after her return home. He asked the child's mother to take her temperature systematically as there was every reason to suppose that she had been infected. This was done regularly and the eleventh day the temperature was found slightly above normal, although the child felt perfectly well and had not a trace of nose or throat trouble. The child was at once completely isolated and the measles ran its usual course. Eleven days later the child's four brothers all developed measles. Szontagh says that the child could have

infected her brothers only at the moment when the disease began, that is, when the temperature began to go up. The facts in this and similar cases indicate, he thinks, that the contagion must be air-borne and that it must emanate spontaneously from the infected child, which can occur only in the respired air. It leaves the mucous membrane of the air-passages before it shows signs of disease, and penetrates through the sound mucosa of the predisposed receiver. He argues to prove that the organism must be previously sensitized in some way or the virus will not cause the disease. The fact that the period of incubation is about the same for all the eruptive diseases suggests some close connection between them, as also the fact that the causal agent for none of them has yet been discovered. Measles is spread by school infection, while his experience has been that this is not the case with scarlet fever; the incidence of the latter is greatest in August and regularly declines after October. The solution of the problem of the acute infectious diseases lies, he is convinced, in the study of anaphylaxis. Why does a tonsillitis in one individual assume the form of scarlet fever and in another not? It is a well-known fact that an operation, a severe burn, trauma, overexertion or chilling may bring on an attack of scarlet fever. When sore throats are common, scarlet fever occurs more frequently. Another argument in favor of anaphylaxis as a determining factor is the occasional development of measles, for instance, in children apparently absolutely shut off from any source of contagion; he relates a number of instances of this.

### Münchener medizinische Wochenschrift

*October 14, LX, No. 41, pp. 2265-2320*

112 *Regeneration of Axis-Cylinders in Vitro. R. Ingebrigtsen (New York).
113 Improved Technic for Roentgenotherapy. (Neue Wege zur Steigerung der zerstörenden Wirkung der Röntgenstrahlen auf tiefliegende Geschwülste.) H. Sellheim. (Fortschritte in der Erzeugung harter Röntgenstrahlen.) F. *Dessauer.*
114 *Tonsillectomy in Children. B. Riedel.
115 *Estimation of Functional Capacity *of the Liver. H. Hohlweg.*
116 *The Sugar in the Blood with Chronic Nephritis. L. Borchardt and W. Bennigson.
117 *Estimation of Sugar Content of Blood. (Ueber den klinischen Nachweis von Hyperglykämie.) I. Bang.
118 The Petrolatum in Beck's Bismuth Paste Alone Responsible for the Good Effect. (Welches ist der wirksame Bestandteil der Beckschen Wismutpaste?) F. Rost.
119 Serodiagnosis by Abderhalden's Methods in Pregnancy and *Gynecologic Disease.* Tschudnowsky.
120 Electric Influencing of Abnormal Leukocyte Count. O. Veraguth and R. Seyderhelm. *Commenced in No. 40. See abstract 83, p. 1853.*
121 Legal Aspects of Medical Practice. (Der Arzt in der Rechtsprechung.) P. Kaestner.
122 Pathology of the Omentum. W. Gundermann.

**112. Regeneration of Axis Cylinders in Vitro.**—A summary of Ingebrigtsen's work in this line was given in The Journal, Feb. 22, 1913, p. 627.

**114. Tonsillectomy in Children.**—*Riedel* remarks that he had rather remove the gall-bladder, the appendix or an ovarian tumor, than operate on a small, firmly embedded and friable tonsil. Tonsillectomy under such circumstances is a serious operation and requires general anesthesia. With ordinary, enlarged *tonsils local* anesthesia may suffice even for children, but he has never *attempted* it as he dreads the child's crying. The general anesthesia has to be *profound* for a short interval which, *of course,* is not without its dangers. The blood swallowed during the operation may be vomited afterward and give cause for alarm, as it is supposed to be the *dreaded* "*hemorrhage.*" He has known of the pillars being sutured together *on this* account when there was really no tendency *to hemorrhage.* He has attempted tonsillectomy a few times in acute tonsillitis but *found the* tonsils too soft and friable to be removed. He warns in conclusion that an imperfect *operation* is worse than none. A diseased tonsil must be removed *in toto,* down to a small bit of sound tissue which he always tries to save. He prefers a stout, unbendable, heavy and straight clamp, 22 cm. long and 5 and 13 mm. broad, with three teeth. This leaves his right hand free for the knife.

**115. Threshold Levulose Test of Functional Capacity of the Liver.**—Hohlweg expatiates on the instructive oversight of liver *functioning afforded* by the alimentary levulosuria *induced* by graded doses of levulose *on* an empty stomach, *taken in 300* c.c. of milk. The urine is collected every two hours afterward for six hours. According as the case looks *suspicious, he gives 50, 75* or *100* gm. of the levulose, increasing or lowering the amount by 25 gm., after a two or three-day *interval until* the limit of tolerance is reached. The tolerance for levulose is *reduced proportional to* the injury of the parenchyma of the liver. The "threshold" response is thus a *reliable index of the present* existence and severity of pathologic *changes in the liver. He tested* the *urine* for levulose by *the Seliwanoff* method, *namely,* the addition to the urine of equal *parts* of *25* per cent. hydrochloric acid and a few crystals of resorcin, *first* shaking up the urine with animal charcoal to decolor it. The test is regarded as giving positive findings when, *on brief* boiling, a bright red precipitate is thrown down *which dissolves in alcohol, giving it a* dark red *tint.* The findings in *about* 105 *cases of* various liver affec*tions show that the tolerance* is materially reduced when the *common bile duct is obstructed* with a gall-stone and in cases of catarrhal jaundice; alimentary levulose follows ingestion of even *50 gm.* levulose. With neoplasms, enough functionally capable cells are generally left somewhere in the liver so that the tolerance for levulose is not materially reduced. The findings often throw light on the diagnosis and prognosis, and the simplicity and ease of the test and the fact that it may reveal pathologic conditions in the liver *long after the morbid cause has been apparently eliminated, render the* method very valuable. In one of the cases cited to *illustrate the* workings of the test, a man of 61 had been having *symptoms* for three months suggesting gastric cancer, and he had lost over 33 pounds in weight in six months. No blood could be found in the stools but urobilin was constant in the urine. There was some levulosuria after ingestion of 100 gm. fasting, and this was accepted as evidence that the trouble was cholelithiasis. Complete recovery followed and there has been no further disturbance *during* the six years since. The retrospective diagnosis was acute disturbance in the liver following temporary obstruction of the common bile duct. In another case a woman of 41 had signs of such obstruction but there was no severe pain at *any* time, while the woman had grown very emaciated during the last few months. All this suggested compression *of the bile* duct by a cancer, but intense levulosuria followed ingestion of 75 gm. and later of 50 gm. of levulose. On the basis of this finding, cancer was excluded and the operation disclosed a small gall-stone lodged in the common bile duct and no trace of a neoplasm.

**116. Sugar in the Blood in Chronic Nephritis.**—*Investigation* of eight patients with nephritis indicated that the sugar content of the blood is abnormally high in nephritis *only* when there is retention of sodium chlorid or nitrogen or both. The same causes which induce reabsorption of the sodium chlorid, cause reabsorption of the sugar *normally* eliminated in the urine.

**117. Technic for Determination of Sugar Content of Blood.**—Bang's method requires only two or *three* drops of blood. They are taken directly from *the lobe of the ear on* a piece of *good* blotting paper 16 by 28 mm. The scrap of *paper* is held with forceps, and it is not allowed to soak up *too much* blood. It is then placed in a test-tube. A *second test-tube holding* 5 c.c. of a mixture of 136 c.c. of saturated solution of potassium chlorid, 64 c.c. water, and 0.15 c.c. of a 25 per cent. solution of hydrochloric acid, is heated and *when* it boils it is poured carefully over the blood-paper. In order to have the fluid come in contact with all the blood he holds the tube slanting. When entirely cool, not until *after half an* hour, the fluid is then poured into a third test-tube, and to it are added 5 drops of the Fehling *II reagent* and 2 drops of Fehling I. It is then boiled for half a minute and watched for two minutes. If no oxydul precipitates out in two minutes, the proportion of sugar *in* the blood is below 0.15, that is, it is *within practically* normal range. The amount of oxydul *thrown down* is an index of the percentage of sugar in the blood.

### Wiener klinische Wochenschrift, Vienna

*October 16, XXVI, No. 42, pp. 1689-1736*

123 *Biologic Test Shows Absorption of Sperma in Female Organism. E. Waldstein and R. Ekler.
124 *Blood-Pressure and Cholesterin Content. (Hypertension und Cholesterinämie.) C. Cantieri.
125 Vaccine Therapy of Ozena. (Coccobacillus foetidus ozaena Perez.) G. Hofer and K. Kofler.
126 Iodized Oil as Reagent in Serodiagnosis of Syphilis. (Reaktion luetischer Sera mit einem Jodöl-Reagens.) W. Landau.
127 *Aid in Prognosis in Pulmonary Tuberculosis. M. Weiss.
128 Means to Control Spread of Tuberculosis. (Zur Tuberkulosebekämpfung.) A. K. v. Aichbergen.
129 The Blood of Syphilitics Alleged to be Highly Infectious. R. Frühwald.
130 Modern Pathologic Anatomy in the Medical Course. H. Albrecht.

**123. Biologic Test for Absorbed Sperma in Female Serum.**—The research reported was done on rabbits. It demonstrated the presence in the serum of the female after cohabitation of a ferment that digested testicle tissue; beforehand the test had constantly elicited a negative response. The ferment reaction persisted positive in the gravid animals up to sixteen days after littering. Waldstein and Ekler say that these findings indicate that the female organism is materially influenced by substances absorbed from the sperma, causing the production of a ferment hitherto strange to the organism. If these findings apply also to human beings, they would explain certain phenomena in the life of a woman which have hitherto been credited only to psychic processes. Possibly the ninhydrin test for the sperma reaction might prove instructive in certain medicolegal circumstances.

**124. The Blood-Pressure and the Cholesterin Content.**—Cantieri's comprehensive research failed to show any direct connection between an abnormally high blood-pressure and the cholesterin content of the blood. With nephritis there is generally an excess of cholesterin in the blood, even in cases with normal or subnormal blood-pressure.

**127. Prognosis in Pulmonary Tuberculosis.**—Weiss remarks that the outcome in tuberculosis depends more on the reaction of the organism to the infection than on the infecting agent, and consequently our efforts to foresee the outcome must be based on what we can learn of these reactions. In the early stages, the production of lymphocytes in the blood runs parallel to the energy of the defense set up against the invading germs. Forms of tuberculosis with slight tendency to lymphocytosis afford the least favorable prognosis. Tuberculous processes in the lungs make exceptional demands on the lymphocytes, as each tubercle becomes enclosed within a wall of lymphatic cells. Lymphocytes are thus withdrawn from the blood-stream to such an extent that the proportion in the blood may drop to 5 per cent.—a bad sign. Diseases which make special demands on the lymphocytes, such as measles in a child and typhoid in an adult, deprive the organism of the protecting lymphocytes and thus open the portals to tuberculosis, or throw down the barriers around a hitherto latent focus. It is possible that the change to negative of the skin tuberculin reaction in measles and in advanced stages of tuberculosis, is due to the special using up of the lymphocytes in these conditions.

Another sign that the defensive powers of the organism are being overwhelmed is the appearance of urochromogen in the urine. This shows that specific toxic substances are being absorbed, and hence it is a bad sign. The test for urochromogen is extremely simple and reliable. Fresh limpid urine is diluted three times in a test-tube with ordinary water, and then half is poured into another tube and 3 drops are added to it of a 1 per thousand solution of potassium permanganate. In the presence of urochromogen, the fluid turns a canary yellow. The appearance of urochromogen in the urine is a sign that a local circumscribed tuberculous process has changed its character and become general, gravely menacing the organism. The urochromogen disappears from the urine when the organism gets the upper hand again; as long as it is found in the urine the prognosis is unfavorable, and it is the graver, the longer the urochromogen reaction has existed. Comparison of the urochromogen reaction and the skin tuberculin test in eighty-four cases showed concordance in sixty-six. In the eighteen cases in which the findings conflicted, the urochromogen proved the better prophet in all but four cases. Phagocytosis in the sputum is of little moment for the prognosis, according to his experience, and he says the same of Much's granula.

### Zentralblatt für Chirurgie, Leipsic

*October 18, XL, No. 42, pp. 1625-1656*

131 *Symmetrical Gangrene of the Feet Among the Soldiers in the Balkan War. (Cholera- und Typhusgangrän.) A. Welcker. (Eigentümliche Fussgangränen aus dem Balkankriege.) L. Dreyer.
132 *Technic for Orchidopexy. A. Schäfer.

**131. Gangrene of the Feet Among the Soldiers in the Balkan War.**—Two articles were recently published in this *Zentralblatt* and one was summarized in THE JOURNAL, May 24, p. 1675, describing gangrene of the feet among men in the Turkish army. Conditions were similar to those after freezing of the feet, but the weather had not been cold enough to freeze. The cases were reported as "frost-bite without frost weather." Welcker takes exception to this explanation, believing that the gangrene was due to other causes. He encountered 115 cases of it among the men in the Bulgarian army during the same period, and in every instance the men had had one or two weeks before a typical attack of cholera or of dysentery or diarrhea. In forty-five other cases the gangrene developed in men who had or had just recovered from typhoid. After the spread of cholera had been arrested, no further cases of gangrene developed except among those with typhoid. At a later period he encountered hundreds of cases of actual freezing of the feet, and conditions in these cases differed materially from the gangrene following acute intestinal disease. Welcker cites some authorities who mention gangrene as a complication of cholera. In his cases the gangrene was generally symmetrical and the exposure and cold undoubtedly contributed to its development. In the second Balkan campaign the cholera occurred during the summer and no cases of gangrene came to his knowledge. Dreyer ascribes the gangrene among the Turkish soldiers to their way of dressing the feet, which impedes the circulation.

**132 Orchidopexy.**—To prevent retraction and pain—which compelled a second operation in a recent case—Schäfer passes a stout silk thread through the lower pole of the testicle and fastens it to the inside of the opposite thigh at such a distance below that it pulls on the spermatic cord and thus stretches it. The testicle when it is drawn down is forced through a slit in the septum so that it lies with the normal testicle and the septum is sutured behind it. In case both testicles have to be brought down, they are crossed over into opposite sides of the scrotum and the silk threads fastening them to the thighs below are also crossed,

### Zentralblatt für Gynäkologie, Leipsic

*October 18, XXXVII, No. 42, pp. 1549-1580*

133 *Bleeding in the Ovary in Cases of Uterine Myoma. (Uterusmyom und Ovarialblutungen.) K. H. Oehman.
134 * Roentgen Rays Break up Adhesions in Pelvis. (Lösung parametrischer Verwachsungen durch Röntgenstrahlen.) M. Fraenkel.

**133. Bleeding in the Ovaries with Uterine Myomas.**—Oehman has discovered evidences of ovarian hemorrhage in nine cases of uterine myomas. No traces of inflammation were found in the ovaries or tubes in any instance nor signs of vascular anomalies. Ferguson reported last year a case of serious hemorrhage from the ovary after supravaginal amputation for a large myoma; the woman recovered after removal of the ovary, the seat of the hemorrhage. It issued from a ruptured corpus luteum. The ovaries should be inspected with special care in all operations for uterine growths.

**134. Roentgen Rays Break up Adhesions in the Pelvis.**—Fraenkel has been impressed with the way in which parametritic adhesions binding down the uterus were found loosened up on reexamination of patients a few months after a course of Roentgen-ray exposures for some gynecologic affection. These adhesions holding the uterus in backward displacement are often the source of great discomfort or pain, and this action of the Roentgen rays on them is a welcome addition to our armamentarium. He found it marked in 75 per cent. of the patients he has been able to reexamine recently out of his total 500 gynecologic patients given Roentgen-ray exposures. A second operation became necessary for appendicitis on a patient operated a year before for tuberculous peritonitis at which time numerous adhesions were found, too extensive to be all broken up, and no attempt was made to do this. A large abscess in the pelvis later was treated by roentgenotherapy. At the operation on the appendix no trace could be found of the old adhesions; they had all been absorbed. This also occurred in a second case of tuberculous peritonitis. The action on the adhesions was most evident in a case of ovarian cyst. As the anesthesia was not borne well, the operation was interrupted after the cyst had been evacuated. Some smaller cysts followed causing severe disturbances as they pulled on the bladder, etc. Under roentgenotherapy the discomfort and disturbances all ceased, although the cysts had not been reduced in size; evidently the adhesions had been broken up and absorbed leaving the cysts free and movable, and they ceased to be disturbing. A number of similar experiences are cited, including three cases of pleuritic adhesions and two with relics of pneumonia demonstrating the efficacy of the Roentgen rays in promoting the absorption of adhesions. Fraenkel has found no reference in the literature to this property of these rays except Schulz' mention of their efficacy in treatment of cicatricial keloid.

### Gazzetta degli Ospedali e delle Cliniche, Milan

*October 12, XXXIV, No. 122, pp. 1271-1286*

135 *Treatment of Exophthalmic Goiter with Serum of Thyroidectomized Animals and Carbonated Salt Baths. P. Stein.

*October 14, No. 123, pp. 1287-1294*

136 Advantages of Instrumental Dilatation of the Os Uteri in a Case of Eclampsia. R. Giunta.

*October 16, No. 124, pp. 1295-1302*

137 Epinephrin the Best Means at our Command for Treatment of Whooping-Cough; Fifteen Cases. (L'adrenalina nella terapia della pertosse.) L. C. Mulas.

*October 19, No. 125, pp. 1303-1318*

138 *Otitis Media in Infants. F. Strina.

135. **Exophthalmic Goiter.**—Stern gives an interesting review of the experiences to date with the serum of thyroidectomized animals in exophthalmic goiter and relates its successful application, supplemented by a Nauheim course of carbonated baths, in three cases, two very severe. The patients were women of 29 and 51, and the exophthalmic goiter had resisted all other treatment. In the oldest patient a course of baths the year before had been ineffectual, but this year, supplemented by the serotherapy, remarkable improvement was realized. The much dilated left ventricle subsided to normal size in all the cases. The circumference of the neck grew smaller by 1.5, 2 and 2.5 cm. By commencing with small doses it is possible to improve without by-effects.

138. **Otitis Media in Infants.**—Strina states that he found evidences of otitis media in 70.9 per cent. of the infant cadavers at the Venice foundlings' home. In the last ten years the mortality was 15 per cent., and in 152 of the 346 necropsies there was otitis media on one or both sides, the frequency thus being 44.70 per cent. Of this number about 78 per cent. of the infants were less than six months old. He calls attention to the anatomic conditions which permit infection of the ear from the mouth during delivery or later; the eustachian tube is broader, shorter and more horizontal than later in life, and it can readily become infected from matter forced into it in coughing, vomiting, etc. On account of this broad opening the ear trouble drains readily so that the membrane does not perforate as a rule; perforation was found in only four cases. In a few instances the infection was most probably of blood-borne origin. The otitis media was generally the work of ordinary germs, and the children thus affected were usually in poor physical condition. The otitis media was less frequent the older the infants, showing either that the ear trouble had healed or that the parts had become more resistant. The otitis evidently was primary in some cases and swallowed pus from it entailed gastro-intestinal disturbances. In other cases the primary lesion was in the intestines and the vomit containing infectious material led to involvement of the ear, either directly or by way of the blood. This was probably the mechanism likewise with primary lesions in the lungs. A remarkable feature of otitis media in infants, according to his experience, is the absence of involvement of the mastoid and intracranial region. He suggests in conclusion that deafness and deafmutism may be traced in some cases to unsuspected disease of the middle ear soon after birth.

### Policlinico, Rome

*October 12, XX, No. 41, pp. 1469-1508*

139 Application of 5 per cent. Aqueous Solution of Stovain Cures Ejaculatio Praecox; One Case. S. Baglioni and G. Amantea.

*October 19, No. 42, pp. 1509-1544*

140 *Means to Secure Continence after Operation for Rectal Cancer. G. Zironi.

141 Pancreatitis from Mumps; Three Cases. (Pancreatite da orecchioni.) A. Allegri.

*October, Medical Section No. 10, pp. 433-480*

142 Drum-Stick Fingers and Toes in Young Man with Tuberculous Process in Lung. (Sulla osteo-artropatia ipertrofica pneumonica.) R. Massalongo and U. Gasperini.

143 Therapeutic Pneumothorax Cures Abscess in Lung; Two Cases. G. Izar.

144 Heart-Block; Two Cases. (Dissociazione atrio-ventricolare completa.) C. Pezzi.

145 Relations between Serum Sickness and Anaphylaxis. (Rapporti tra malattie da siero e fenomeni anafilattici.) T. Pontano. Commenced in No. 9.

140. **Means to Prevent Incontinence After Operation for Rectal Cancer.**—Zironi reports a case in which he succeeded in retaining the anus intact and without contamination while the rectum was amputated above. The results were excellent, the patient having complete control over the anus without the least tendency to incontinence during the seven months to date. The special field for the technic is in women, but the principle can also be applied to men. He made an incision encircling the anus, cutting down to the cellular tissue, and then ran a stout silk thread around in a purse-string suture and drew it up tight, thus completely closing the anus. The external sphincter muscle was then divided, cutting down to the intestine along the anovulvar rhaphe and into the vagina. The halves of the external sphincter were then drawn aside and the rectum was prepared for the amputation, suturing the intestine above the cancer to the levator ani on each side to prevent undue traction later. The two halves of the external sphincter were then replaced and sutured together and the vagina restored—all of which was done before the rectum was opened. The wound healed in eight days in his case, permitting administration of castor-oil.

### Riforma Medica, Naples

*October 11, XXIX, No. 41, pp. 1121-1148*

146 Unfavorable Experiences with Double Potassium Cyanid and Gold in Syphilis and Various Skin Diseases. G. Burzi.

147 Addison's Disease with Apparently Normal Adrenals and Hypertrophy of Accessory Adrenal Glands. N. Pende and G. B. Varvaro. Commenced in No. 40.

148 Association of Acromegaly and Myxedema. L. Millioni. Commenced in No. 39.

*October 18, No. 42, pp. 1149-1176*

149 Unreliability for Diagnosis of Cancer of the Neutral Sulphur in the Urine. (La nuova reazione di Salomon-Saxl sullo zolfo neutro orinario.) L. Marenduzzo.

150 Diagnostic Importance of Rate of Elimination of Oxyproteinic Acid in Various Diseases. V. Faggella.

151 The Leukocytes and the Gas in the Blood in Carbon Monoxid Poisoning, and during Fasting, Etc. M. Ciovini. Commenced in No. 41.

### Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

*September 13, II, No. 11, pp. 817-900*

152 *Mistakes in Diagnosis with Deformity of Trunk. (Geneeskundige dwalingen bij vergroeiingen van den romp.) J. A. Korteweg.

153 Clinical-Chemical Diagnosis in Stomach Diseases. F. A. Steensma.

154 *Echinococcus* Disease of Lung; Recovery after Operation. C. Bles.

*September 20, No. 12, pp. 901-984*

155 Malignant Growth Cured by Wound-Infection. (Een kwaadaardig gezwel genezen door wond-infectie.) J. Rotgans.

156 Case of Neurofibromatosis. (Een geval van de ziekte van von Recklinghausen.) P. H. van Roojen.

152. **Mistakes in Diagnosis of Skeletal Deformities.**—Korteweg expatiates on the erroneous interpretation of certain findings suggesting deformity of the trunk, and cites several

cases to show how difficult it is to avoid mistakes in diagnosis under certain conditions. Among them is the case of a girl with merely a lumbar protrusion of the spine, but as she happened to have backache, spondylitis was assumed and she was kept long in bed and treated on this erroneous assumption. Korteweg has been studying lumbar kyphosis with special care and has reached the conclusion that in many of these cases the curvature is physiologic. When a young girl, for instance, with a very flexible spine is examined sitting up in bed and stooping forward, we receive an impression very different from that of a body lying on a flat surface. Examining in these conditions we may find a regular kyphotic curvature or lumbar lordosis; lordosis may be complicated with kyphotic protrusion of the middle lumbar spinous process. While an ordinary kyphotic curvature does not suggest spondylitic kyphosis, a limited lumbar kyphosis in the middle of a slight lordosis makes the diagnosis more difficult. If the patient happens to complain of backache, the examining physician is liable to be misled to assume an inflammatory origin for the curvature. If patients are examined standing, these mistakes are less likely to occur.

Another class of cases liable to prove misleading are those in which the chest wall bulges along one side of the sternum. If the patient happens to complain of a pain in the region, an abscess or osteosarcoma is at once suspected, when in reality the bulging is merely the protrusion of the sharp angle of the first and second costal cartilages; the angle becomes less pronounced lower down. If there were in fact a sarcoma at this point, the adjoining ribs would be displaced or the sternum would bulge. A retrosternal abscess or growth would not produce such a sharp point.

The clavicles may be asymmetrical, especially at the junction with the sternum, and the chest is not evenly rounded, while slight traces of scoliosis are evident. With this form of scoliosis there is more than ordinary torsion of the vertebrae. Another class of cases liable to be misinterpreted are those in which the region over the spinous processes of the lumbar vertebrae protrudes. This is the result of scoliosis with considerable torsion of the vertebrae. The bulging of the lumbar muscles during examination may simulate fluctuation. The asymmetry from old scoliosis with its many deformities is sometimes ascribed to intercurrent trauma, and made the basis for claims for damages.

### Pediatria, St. Petersburg

*IV, No. 5, pp. 337-416*

157 Lime Salts in the Blood of Children. (Soderjhania izvesti v krovi u dietei po metodu Wright'.) M. M. Katzenelenbogen.

*No. 6, pp. 417-499*

158 Morbidity of Schoolchildren in Moscow. D. E. Goroschoff.
159 *Intrapleural Injection of Epinephrin in Treatment of Pleurisy with Effusion. E. S. Volkova.
160 Case of Muscular Atrophy; Aran-Duchenne Type. P. I. Fedoroff.
161 *Mild Chronic Nephritis in Children; Two Cases. (Paedonephritis levis Heubner'a.) I. V. Stavsky.
162 Infant Welfare Work. L. O. Michnik.
163 *Treatment of Diphtheric Stenosis of the Larynx. N. I. Uspensky. Commenced in No. 41.
164 Hemorrhage from the Uterus in New Born Infants. V. P. Joukovsky. See Abstract 125, page 1855.

159. **Intrapleural Injection of Epinephrin in Treatment of Pleurisy with Effusion.**—Volkova used epinephrin, 1 to 1,000, in six cases of different forms of pleurisy with effusion. No other remedies were given. The doses varied from 1½ divisions of a common 1 gm. hypodermic syringe to 3, and in the last case (a 4-year-old boy) even 5 divisions. The pulse-rate climbed from 98 to 120, or from 120 to 140, but toward evening of the same day the pulse became the same as before the injection. The amount of urine increased. The number of injections varied from one to six and they were given every second or fifth day. The age was from 2 years and 4 months to 10 years. Five patients recovered almost completely and in a short time, in eight or thirty days; only in two cases were any by-effects from the epinephrin noted, in the form of very transient glycosuria. As children bear the treatment well, Volkova strongly recommends it to the attention of pediatrists.

161. **Mild Chronic Nephritis in Children.**—Stavsky reports two cases of Heubner's paedonephritis levis which, as is well known, does not show grave symptoms. Frequently the nephritis is not even suspected, being merely accidentally discovered. In some cases it manifests itself only as anemia, and the children are treated for this alone. If the urine is examined it is found to contain small amounts of albumin (1:1,000 or 1:2,000), some hyaline and granular casts, leukocytes and erythrocytes. The characteristic feature of this form of nephritis is that the albuminuria is constant, being found in both the day and night urine, but the condition of the patients remains stationary. The children are on an average about 6 years old and have passed through scarlet fever at some time. In Stavsky's cases the condition of both patients has remained stationary during the year or more since, and no treatment or lack of treatment has modified conditions in the least. He recommends in such cases not to keep the patient too long in bed, but to allow him to be up and about and lead the usual life except refraining from food that is liable to irritate the kidneys.

The practical importance of discovering the mild chronic nephritis is that it will warn against measures for the anemia, etc., which might injure the diseased kidneys still more. Stavsky even insists that the urine should be examined for albumin before starting a course of arsenic for anemia in a child, the discovery of albuminuria warning against arsenical medication. He suggests that this mild chronic nephritis is probably more frequent than supposed to date; it escapes detection unless the urine happens to be analyzed for any cause. The parents can be reassured that the nephritis although it may drag along for years, yet persists constantly mild according to the clinical experiences on record to date. (Stavsky's article and the preceding literature on the subject form the basis of an article in the *Semaine Médicale*, October 15.)

163. **Diphtheric Stenosis of the Larynx.**—Uspensky reviews 2,760 cases of laryngeal stenosis from diphtheria; intubation or tracheotomy was indicated in 1,436 cases. Diphtheria bacilli were found in 77.6 per cent., and in sixty-eight cases the diagnosis was confirmed by necropsy, while in 135 cases the membrane was expectorated, so that in 84.9 per cent. the diagnosis was confirmed. Of the total patients, 559 or 38.92 per cent. died, while tracheotomy gave a higher mortality. He does not advise too early intubation as in half of his cases the patients got along without it. The mortality rate in an epidemic does not depend on the time of treatment, but rather on the age—the older the children, the less the mortality. It was highest in infants less than a year old. In such young infants intubation is to be preferred; it gave 37.4 per cent. recovery, while only 4.2 per cent. recovered after tracheotomy. Repeated intubation was necessary in 40.8 per cent. during the first hour that followed the extubation; in 91.1 per cent., it was necessary during the first twenty-four hours. Each patient was intubated on an average, 1.96 times. The best time for removal of the tube is the end of the second and beginning of the third day. The intubation shortens the average duration of the disease; in 51.4 per cent., the course was less than two weeks. With primary tracheotomy it was more than three weeks in 61.1 per cent. When intubation for any reason cannot be done, tracheotomy is of great service; otherwise intubation should be preferred, even at the risk of causing a contact ulceration in the air passages. He never had gangrene develop in children above 2 or 3 years of age, and, in these there seemed to be no relation between the duration of the stay of the tube and the gangrene. The mortality of children with membranous croup depends on the involvement of the respiratory organs. Pneumonia developed after primary tracheotomy in 67 per cent.

### St. Petersburger medizinische Zeitschrift

*October 14, XXXVIII, No. 19, pp. 227-240*

165 Classification of Cases of Kidney Disease. (Ueber sekundäre "genuine" und arteriosklerotische Schrumpfniere. A. Schabert.
166 Heliotherapy. (Ueber Sonnenbehandlung.) O. Moritz.

### Semana Medica, Buenos Aires

*September 11, XX, No. 37, pp. 573-632*

167 Chondroma of the Foot with Myxolipomatous Degeneration. G. B. Arana.
168 *Benzol in Leukemia. V. Fossati.
169 The Therapeutic Limits of Heat and Cold in Hydrotherapy. G. B. Vinaj.

*September 18, No. 38, pp. 633-696*

170 *Extra-Uterine Pregnancy. (Embarazo ectopico.) F. Chiossone. Commenced in No. 37.
171 *Dermoid Cyst Interfering with Delivery. (Distocia por quiste ovarico dermoide previo.) J. Badia and others.
172 *Necessity for School Dental Clinics. J. B. Patrone.
173 *Serotherapy of Epilepsy. A. G. Gaspar.

168. **Benzol in Leukemia.**—Fossati's patient was a young woman with severe splenomedullary leukemia, not modified by roentgenotherapy. A fatal outcome seemed imminent when a course of benzol treatment was given and prompt improvement followed. The young woman was not able to bear the large doses of benzol that have been advocated, so the dosage was only from 20 to 60 drops in capsules, suspending the treatment for a day or so occasionally. The temperature returned to normal and by the end of two months the general condition was better than it had been since the first symptoms had been observed a year before. The blood-count at various dates is tabulated showing the increase in the reds and the drop in the whites from 360,000 to 56,000 in three months, the hemoglobin increasing from 35 to 50 per cent.

170. **Extra-Uterine Pregnancy.**—Chiossone reviews the experiences with extra-uterine pregnancy during 1912, in the women's departments of the ten hospitals of Buenos Aires. There were only four deaths among the 105 cases, and in the fatal cases the women were already infected or exsanguinated. He comments on the variability of the symptoms observed and urges that before any abdominal affection in a woman in the child-bearing age is diagnosed, it is necessary to exclude extra-uterine pregnancy. A doughy resistance in the pouch of Douglas is suggestive of a tubal pregnancy, but about the only positive sign of an extra-uterine pregnancy is the expulsion from the uterus of decidual membrane. An important element in differentiation is a history of some gynecologic affection; the ovum scarcely ever locates outside of the uterus unless there is a predisposition from preceding pathologic changes for the abnormal embedding. Increasing hemorrhage always demands an operation, but if the hemorrhage seems to have stopped he leaves the case to Nature, ready to interfere at need. He gives the details of ten cases; in one the woman passed through two extra-uterine pregnancies. In conclusion he warns that it may be necessary in some cases to be wary in stating the diagnosis of extra-uterine pregnancy, as social and legal questions may be involved. There is always the possibility that the accumulation of blood may come from an ovarian or other tumor in the absence of pregnancy.

171. **Dermoid Cyst Interfering with Delivery.**—In the case described the cyst was punctured and the contents withdrawn through a wide trocar after which the child was safely delivered. Three months later the cyst was removed by the vagina; it weighed then 100 gm. Analysis of the literature on the subject shows that removal by laparotomy of a cyst interfering with delivery has frequently entailed serious complications for mother or child or both, while vaginal removal is simple and harmless if preceded by puncture and evacuation of the contents of the cyst. This permits natural delivery and normal puerperium. The cases on record are summarized to show the advantages of this technic over the abdominal technic or colpotomy.

172. **Necessity for School Dental Clinics.**—Patrone's article was read at the recent international congress for school hygiene held in Buffalo. He reiterates anew the seriousness of dental caries for the development of the child, the importance of prophylaxis, and the necessity for those realizing this importance to organize, formulate and direct the propaganda for hygiene of the mouth and teeth among schoolchildren as a matter of vital importance for the public health.

173. **Serotherapy of Epilepsy.**—Gaspar gives no details but speaks in general terms of the conception of epilepsy as a toxemia, evidenced by the toxicity of the cerebrospinal fluid for animals, and by the efficacy of reinjection of the patient's own cerebrospinal fluid or fluid from other epileptics. The fluid is injected subcutaneously or into a muscle once a week, the amount not over 10 c.c. He queries whether the undeniable unmistakable improvement and even cures realized by this serotherapy can be explained by assuming the existence of antibodies in the fluid.

### Hospitalstidende, Copenhagen

*October 1, LVI, No. 40, pp. 1157-1196*

174 Phlegmonous Disease of the Intestines. (Nogle Tilfælde af flegmonøs Tarmbetændelse.) H. Møller. Commenced in No. 39.

### Ugeskrift for Laeger, Copenhagen

*October 2, LXXV, No. 40, pp. 1627-1656*

175 *The Sugar in the Blood. (Blodsukkerundersøgelser under normal og nogle patologiske Forhold.) I. Bing and B. Jakobsen.

176. **The Sugar in the Blood.**—Bing and Jakobsen report the results of estimation of the sugar content of the blood in sixteen normal persons, in thirteen with kidney disease, in seven with stomach or pancreas disease, in five with merely nervous disturbances, in seven with diabetes, and in six suspected of diabetes. The estimation was made by means of Bang's technic which they regard as an improved method for the purpose on account of its simplicity, rapidity and the fact that only a drop or two of blood is required for the test. (It is described in abstract 117 above.) The normal range was from 0.06 to 0.12 per cent., the average 0.1. The test was applied always at the same hour, 8 a. m. fasting. In a series of tests on a similar group of ten healthy persons given 100 gm. sugar in a cup of tea, the sugar content of the blood was found materially increased one hour afterward, but by the second hour the proportion had dropped back to the previous figure. This shows the importance of making the tests always under the same conditions and of being on the lookout for the briefly transient alimentary hyperglycemia. In two other cases, men of 55 and 60 had been taking very large amounts of sugar systematically on account of a chronic heart disease, hoping thus to improve the nourishment of the heart. Even with these doses of 250 gm. of sugar and above, the sugar content of the blood kept within normal range. In kidney disease the sugar content was a little above normal in a few of the thirteen patients tested, but it generally dropped to normal during the stay in the hospital and there was no abnormal alimentary hyperglycemia. The findings showed further that there is no constant relation between the sugar content and the blood-pressure; each may run an independent course. No excess of sugar in the blood was found in the cases of stomach or thyroid affections or neurasthenia, but there was a slight tendency to hyperglycemia in a case of acute pancreatitis and of cancer involving the pancreas. With polycythemia there was hyperglycemia, on account evidently of the large proportion of reducing substance in the blood corpuscles. With diabetes, the sugar content was abnormally high both fasting and after meals, but the hyperglycemia and the glycosuria did not run parallel; the latter may exist with normal sugar content in the blood. This emphasizes the kidney element in diabetes. In seven typical cases of diabetes, the sugar content ranged from 0 071 to 0.146 per cent. in one patient aged 44 in the course of a month. The range in the total seven was from 0.071 to 0.265 per cent. The great practical importance of the research reported lies in the fact that by examining the blood for sugar in dubious cases of diabetes or when the condition has improved under treatment, we are able by estimation of the sugar content to determine whether the diabetes has actually been conquered or whether it is liable to flare up again on any indiscretion. In such cases the casual and occasional appearance of glycosuria with normal sugar content in the blood may be accepted as a comparatively trivial phenomenon, not fraught with serious consequences.

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# THE PRODUCTION OF ULCER OF THE STOMACH BY INJECTION OF STREPTOCOCCI *

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Hemorrhages, superficial erosions and definite ulceration of the mucous membrane of the stomach and duodenum occur not infrequently during severe infections in man and in experimentally infected or otherwise severely intoxicated animals. In some of these instances there can be no question but that infection in some instances plays a rôle in the etiology of ulcer.[1] Ulcer also has been produced experimentally by injecting bacteria into the gastric artery. The association of mouth and tonsillar infections with ulcer of the stomach has been emphasized. It is said that ulcer of the stomach is more common in regions in which throat infections are particularly prevalent. Clinicians have observed aggravation of symptoms in ulcer of the stomach or duodenum following sore throat. Experimental proof, however, showing that certain bacteria may have a special affinity for the stomach mucous membrane, producing a localized infection, and hence may play a rôle in the causation of the common acute and chronic peptic ulcer in man where the usual symptoms of infection are slight or wholly absent has not been brought forward. In a short note on the etiology of rheumatism[2] I pointed out that ulcer of the stomach followed not infrequently intravenous injections of organisms isolated from rheumatism, especially after animal passage; of laboratory strains of streptococci after they had attained a certain grade of virulence from animal passage, and of emulsions of tonsils which were removed chiefly during convalescence in cases of rheumatic arthritis. I wish here to report experiments along this line.

Ulcer of the stomach or duodenum, or both, have been produced by intravenous injection of certain streptococci in eighteen rabbits, six dogs and in one monkey. The ulcers are usually single, although at times two or more may be present. The primary hemorrhages and later the ulcers are small and deep. The base of the ulcer is usually clean or filled with a brownish blood-clot. There may or may not be a localized peritonitis. Perforation into surrounding adhesions occurred in two dogs and in the monkey. The tendency to bleeding in these ulcers is great. Two dogs died of an acute hemorrhage, while another was bleeding when chloroformed. The rabbits often showed considerable blood in the intestines, although death could not be attributed definitely to hemorrhage in any. Both punctate hemorrhages and ulcers have been found most frequently in the pyloric end of the stomach, then in the fundus, and least often in the duodenum. It should be pointed out that the hemorrhages and ulcers in these experiments are small and sharply circumscribed, and there is not the tendency to digestion and sloughing of mucous membrane—in contradistinction to hemorrhages and erosions—observed after anaphylactic shock, after overwhelming bacteriemic infections and other severe intoxications. In most of the rabbits and in some of the dogs which showed ulcers there was also arthritis, in some myositis and the picture of an "ascending" nephritis. Cholecystitis, with beginning formation of gall-stones, and appendicitis have also been found.

It must not be supposed that the ulcers are accidental, because they occur, commonly, only when streptococci of a certain grade of virulence are injected. To illustrate: Strain 319, originally a pneumococcus which was isolated from the blood in lobar pneumonia six years ago, and which had lost its virulence, resembling now a streptococcus, was passed through nineteen rabbits. The first thirteen passages (intravenous injections) failed to show ulcer in any, while the next six passages showed ulcer of stomach three times. Strain R51A, originally a pneumococcus isolated from the blood in pneumonia nearly eleven years ago but recently transformed into a hemolytic streptococcus, was passed successively through twenty rabbits. In the first fifteen animals ulcer was not found, while the next five passages showed ulcer of stomach twice. The strains from rheumatism before animal passage produced ulcer in two out of sixteen animals; after from two to five passages ulcer was produced in seven out of eighteen rabbits, while after from five to ten passages again only once in eight animals injected. When the virulence is very low ulcer occurs very rarely; when virulence is of a certain grade, slightly higher than that of the streptococcus from rheumatism, it occurs commonly; but when the virulence becomes still higher ulceration of the mucous membrane is again rare. It is practically impossible to produce this type of ulcer of the stomach with *Streptococcus viridans* as isolated from the blood in endocarditis or with highly virulent hemolytic streptococci or pneumococci.

The grade of virulence of the organisms when ulcer is obtained, commonly, is such that they disappear from the general circulation and the uninjured tissues. This fact afforded opportunity to study the exact relation of the organisms injected to the small areas of hemorrhage in the mucous membrane and to the ulcers. The areas of hemorrhage and ulcers were cut out, in four animals, together with corresponding pieces of the healthy stomach wall, washed thoroughly in repeated changes of sodium chlorid solution, crushed in a mortar, suspended in sodium chlorid solution and a series of blood-agar plates made. Cultures from the blood were also made. In one animal which died twenty-four hours after a third injection the blood still contained a moderate number of streptococci. Streptococci were recovered from the healthy, the hemorrhagic and the ulcerated area. The healthy area showed five, the hemorrhagic area eighty-two, the ulcerated area sixty colonies. Saprophytic bacilli and colon bacillus were present in small numbers in each. In the other three in which the blood was sterile the cultures from the healthy portion showed no streptococci in any, while the ulcerated or hemorrhagic areas yielded streptococci in varying numbers in each instance. Smears and blood-agar plate cultures from the base in other acute and in more chronic ulcers showed streptococci resembling those injected.

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* From the Memorial Institute for Infectious Diseases, Chicago.

[1] For a comprehensive discussion and bibliography on the pathogenesis of ulcer of the stomach see Möller: Ergebn. d. inn. Med., 1911, vii, 520.

[2] Rosenow, E. C.: The Etiology of Articular and Muscular Rheumatism, The Journal A. M. A., April 19, 1913, p. 1223.

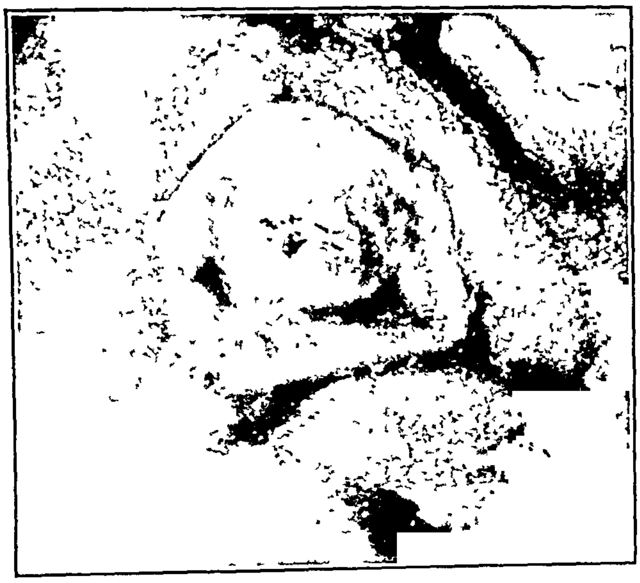

Fig. 1.—Necrosis with beginning ulceration of mucous membrane of stomach in a dog injected intravenously thirteen days previously with a streptococcus of low virulence; from photograph × 5.

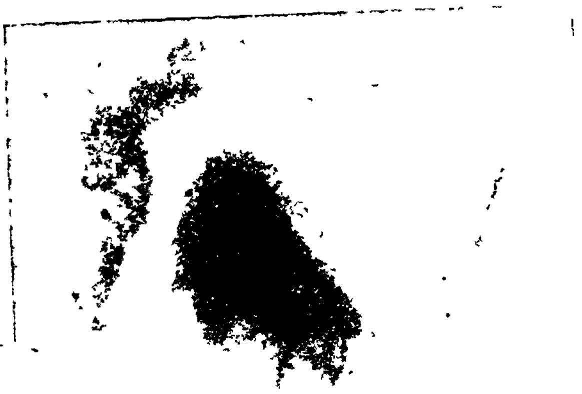

Fig. 2.—Deep, round ulcer at pyloric end of stomach of dog injected intravenously one month previously with a strain from rheumatism after ten animal passages; from photograph × 5.

MICROSCOPIC ANATOMY

The areas of hemorrhage which occur within twenty-four hours after injection usually extend through the whole thickness of the mucous membrane. The blood escapes from the capillaries in the acini and not from a larger vessel in the submucosa. It is most marked and extends over a wider area as the inner surface is reached. Leukocytic infiltration is already present in twenty-four hours, while at the end of forty-eight hours when ulceration has begun it is often quite marked and later is found to extend into the submucosa and muscular coat. The reaction indicating an infection in some ulcers largely disappears after the ulcer has existed for a long time. This is especially so in those ulcers in which invasion of the underlying structures is absent or slight.

The ulceration begins on the surface and rapidly extends to the submucosa. The tendency to invade the submucous and muscular coat is marked and was present in every instance when marked hemorrhage was observed (Fig. 5). The margins are usually abrupt, often undermined and infiltrated. The early picture is well illustrated in Figure 6 and the later appearance in Figure 5. In the former ulceration has not yet extended through the entire thickness of the mucous membrane, whereas in the latter the round-cell infiltration and ulceration have extended well into the muscular coat. In the latter there is a layer of leukocytic infiltration invading the normal tissue. Inside of this the cells show granular degeneration, the nuclei become fragmented as they lose their affinity for stains until finally a more or less homogeneous necrotic layer lines the ulcer. In horizontal sections the ducts along the margin of the ulcer frequently are found to contain leukocytes and red blood-corpuscles. Under high power the early infiltration in the wall of the ulcer is found to be made up chiefly of leukocytes and red blood-corpuscles; later lymphocytes and large mononuclear cells predominate. Here, also, what appear to be plasma cells are found in small numbers. Giant cells have not been observed. The chief cells disintegrate earlier than the parietal cells, giving the erroneous impression that the latter have actively multiplied. The connective tissue stroma of the acini is most resistant and can be made out for considerable distance beyond the place where the other cells, including leukocytes, have disappeared.

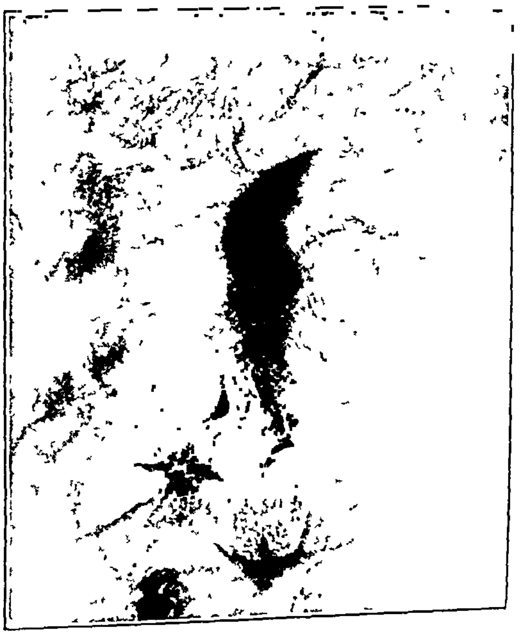

Fig. 3.—Ulcer of stomach in monkey injected intravenously with a strain of streptococcus from rheumatism after it had been converted into the hemolyzing variety and passed through one animal; from photograph × 5.

Thrombosis of adjacent blood-vessels has not been found in the acute ulcers but has been found in veins in two of the more chronic, deep ulcers in dogs. One of these died of acute hemorrhage. The other was chloroformed while bleeding was going on. Sections stained for bacteria by the Gram-Weigert method showed diplococci and short chains in the ulcers, as early as forty-eight hours and as long as twenty-eight days after single injections of streptococci. These were found here repeatedly when the cultures proved their absence in the blood, pelvis of kidney, joints and gall-bladder. Figure 7 shows a moderate number of organisms. They are approximately half way between the free surface of the ulcer and where the cells still stain in a normal way. In this instance the injection of an emulsion from the tonsils was made thirteen days previously (see protocol, Dog 22). The organisms were easy to find. Some areas showed many hundred streptococci in linear arrangement in the connective tissue stroma of the disintegrating acini. Single diplococci were found in the deeper and less disintegrated areas (Fig. 7). The ulcer in one dog which was chloroformed twenty-eight days after a single injection showed fewer diplococci, well down from the free surface of the ulcer. Leukocytic infiltration in this instance had almost entirely disappeared.

It is interesting to note that in all the examinations which were made for bacteria only two Gram-staining bacilli were found and these were on the surface of the ulcerated area. Gram-staining diplococci were found in the thrombus of an adjacent vein in one instance. A painstaking search for similar organisms was made in the normal structures away from the ulcer, but none were found.

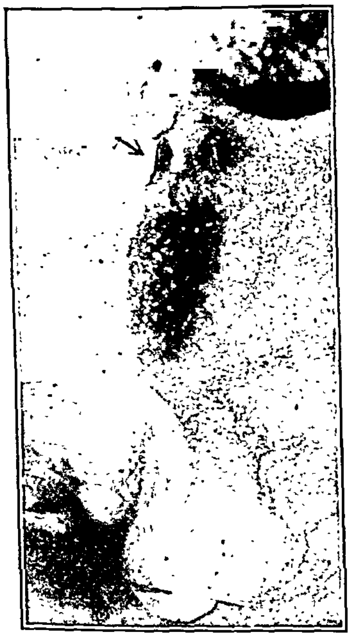

Fig. 4.—Ulcer of duodenum just beyond pyloric ring in rabbit injected intravenously with a streptococcus of low virulence.

## ILLUSTRATIVE PROTOCOLS

The rabbits were fed carrots, hay and oats, the dogs a mixed diet with liberal quantities of meat.

Rabbit 475.—Injected intravenously on May 9, 12, 15 and 19, with the growth from 16 c.c. of ascites-dextrose-broth of Strain 744 from a case of articular and muscular rheumatism. May 19: Lameness in and swelling of right knee-joint; very ill. May 22: Chloroformed and examined at once. A few lesions in the flat muscle of the groins and shoulder. Myocardium, gray and flabby, shows a few whitish areas in papillary muscles. Clear fluid in pericardial sac. Fluid from three joints turbid, containing leukocytes, while that from another joint is clear. The stomach is normal except for the presence of two circumscribed, punched-out ulcers in the pyloric end. The larger is 4 by 2 mm. The base of each is occupied by brownish clotted blood. The margins are elevated, undermined and infiltrated (Figs. 4 and 6). Duodenum is normal. The contents of the large bowel are dark brown in color and give a strong Weber test for blood. The kidneys show no changes except a few whitish elongated areas in the medullary portion. The gall-bladder is filled and the ducts are distended with a slightly greenish viscid mucus containing large masses of pus. Pressure on the gall-bladder, after the plug of pus and concretions in the ampulla of Vater is removed, easily expels the contents into the lumen of the intestines. The masses of pus, on washing and disintegration, are found to contain concretions the size of millet-seed which have the consistency of putty. Smears of the pus show many leukocytes and streptococci. The addition of hydrochloric acid to the concretions liberates carbon dioxid. In the wall of the gall-bladder are found three small round whitish areas which seem to involve chiefly the mucous membrane. Over the largest of these at the fundus there is an adhesion to the omentum. The lungs, liver, brain, intestines, appendix and adrenals show no changes. The spleen is not enlarged. Cultures from the blood, peritoneum, pericardium, pelvis of kidney and two joints prove sterile. The most turbid joint fluid gives a few and the bile a large number of slightly hemolytic streptococci in pure culture, while the base of one of the ulcers in the stomach gives a few of these and saprophytes. One of the concretions, thoroughly washed in sodium chlorid solution, then crushed and used for plate cultures gives a pure culture of streptococci.

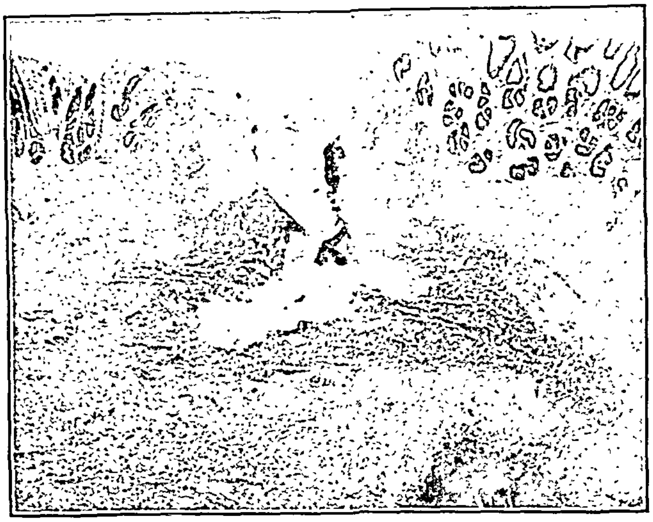

Fig. 5.—Section of ulcer of stomach in Dog 22; died from hemorrhage (see protocol). Note the leukocytic infiltration in the submucosa at base of ulcer, the great depth and extension of the ulcer beyond the mucous membrane. Hematoxylin and eosin; from photograph × 35.

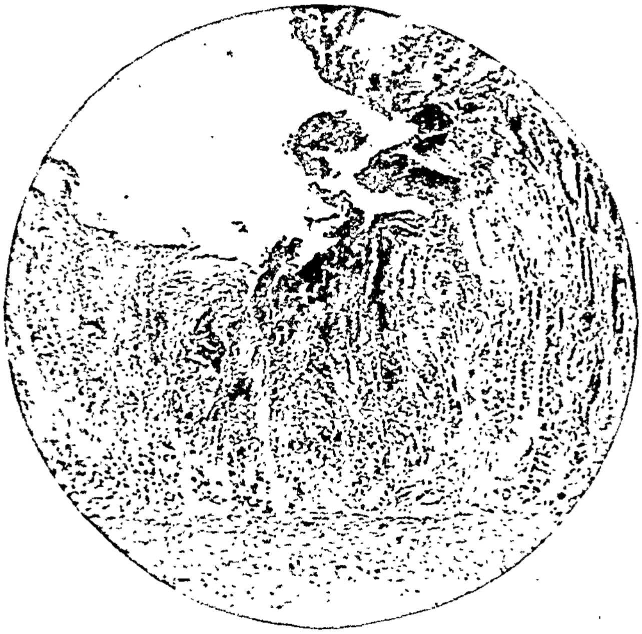

Fig. 6.—Section of ulcer of stomach in Rabbit 475. Note the hemorrhagic base (dark material), the tendency to undermining of margin, and the cellular infiltration at base. Hematoxylin and eosin; from photograph × 90.

Dog 22.—Small young dog. Injected March 18, 1913, with 5 c.c. of an emulsion of a tonsil, removed from a patient following an attack of tonsillitis and articular rheumatism. March 19: Lame in left front leg. Smears from left front wrist-joint show leukocytes and Gram-positive diplococci. Cultures yield green colonies only. March 21: Cultures from blood show a few hemolytic colonies only. Lameness still present, wrist-joint swollen. March 24: Lameness absent, wrist-joint no longer swollen, has lost in weight, lies quietly in corner, drinks water but eats little. Cultures from blood negative. March 29: Still quite well but has grown thin, does not eat. March 30: Dead. Muscles, mucous membrane and other tissues very pale; hemoglobin 12 per cent. Smears from the blood show a few reds and leukocytes. Recent, probably agonal, intussusception at ileocecal valve, easily reduced. Large quantity of partially digested blood in bowel above intussusception, nothing below. Stomach normal except for a deep ulcer in the pyloric ring, measuring 7 by 4 mm., long diameter vertical. The ulcer is filled with a brownish blood-clot, the margins infiltrated and grayish red (Fig. 5). The peritoneum is thickened directly over the ulcer and there is adhesion to the omentum. Heart, kidneys, liver, spleen, adrenals and brain show no changes. Cultures from blood, pericardium, joints, pelvis of kidney and bile sterile, but a blood-plate from material at the base of the ulcer after removing the blood-clot gives an almost pure culture of streptococci (Fig. 7).

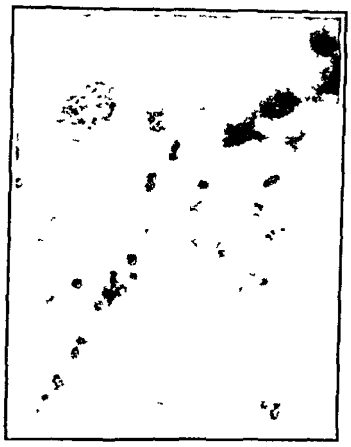

Fig. 7.—Streptococci in the disintegrating connective tissue in the margin of the ulcer shown in Figure 5; × 1200.

Dog 21.—Small, brown and white. Injected *intravenously* March 13, with the growth from 300 c.c. of ascites-dextrose-broth of Strain 734, ten animal passages after isolation from a case of rheumatism. Dyspnea, vomiting and great weakness following injection. March 14: Seems fairly well but has developed severe double conjunctivitis; smears from pus contain Gram-staining diplococci. March 15: Blood-agar plates from pus from eyes show almost pure cultures of green colonies resembling those injected. March 18: Seems ill; has lost in weight. Marked tenderness and swelling of right wrist and elbow-joints. Muscles of back and about shoulders seem tender. March 21: Cultures from joints show few green colonies. Seems better but eats very little and continues to lose in weight. Heart action slow and very irregular. Discharging sinus above right wrist. March 23: Cultures from discharging sinus contain chiefly green colonies. April 10: Chloroformed. Mucous membrane and tissues quite pale. Sinus above wrist leads along muscle sheaths. Fluid from elbow-joint turbid; no connection between elbow-joint and the suppuration adjacent to it. Pericardium empty; whitish linear areas in myocardium; endocardium normal except for a nodular thickening in posterior leaflet of tricuspid valve. Localized adhesive pleuritis. Stomach normal. Duodenum shows a rather large, round ulcer, 2.5 cm. from the pyloric ring and measuring 8 mm. in diameter. The margin is thickened and undermined, the base covered with a brownish blood-clot. The omentum is adherent. The contents of the large intestine blackish and gives a strong Weber test for blood. Liver shows moderate fatty degeneration. The kidneys present a number of small whitish areas in cortex. There are a number of whitish streaks in skeletal muscles, most numerous in the muscles about shoulder and in intercostal muscles; none in diaphragm. Several teeth are loose and there is osteomyelitis of lower jaw. Smears from pus around elbow-joint and lower jaw contain large numbers of Gram-staining diplococci. Cultures from blood, pelvis of kidney and pericardial sac sterile, from elbow-joint give a moderate number, from pus of discharging sinus and pus in lower jaw a large number of slightly hemolyzing colonies.

Monkey.—Injected into vein of forearm on March 18 and 20 with the growth from 100 c.c. ascites-dextrose-broth of Strain 734H. Died on April 2 after severe diarrhea. Only the changes in the stomach are given here. The stomach is normal except for three deep ulcers, two near the pyloric end, the other and the largest in the pyloric ring. All have a clean base and are undermined with infiltrated margins. The largest has bridges of mucous membrane over undermined portions (Fig. 3). The omentum is adherent and, on dissection of the adhesions over the largest ulcer, a small perforation of the serous coat is found. Small intestines normal. The mucous membrane of the large intestines is red, the lymph follicles are much swollen and a number show superficial ulceration. The lymph-nodes in the mesentery and about the pyloric end of the stomach are enlarged and hyperemic. Purulent material in one ulcer in the stomach shows saprophytes and colon bacilli only, but from a small piece of the wall of one ulcer thoroughly washed and crushed, there are obtained in addition to a few contaminating organisms fifteen colonies of streptococci, whereas a similar portion of adjacent healthy mucous membrane shows no streptococci.

## SUMMARY

Intravenous injection of streptococci of the proper grade of virulence may be followed by ulcer of stomach and duodenum. The ulceration is due to a localized infection and secondary digestion. The ulcers are usually single and deep with marked tendency to hemorrhage and perforation, and resemble the human gastric ulcer in many respects. When we take into consideration this close resemblance, that injection of streptococci which have grown in tonsils produce the lesions, and that the virulence of the germs when the *affinity* for the stomach is greatest is of such character that a general infection does not occur, it appears altogether reasonable to suppose that in man gastric ulcer may be caused by streptococci also. The supposed relation between infected tonsils or gums and gastric ulcer may be due not to the swallowing of bacteria, as usually supposed, but to the entrance into the blood of streptococci of the proper kind of virulence to produce a local infection in the wall of the stomach. Many other observations might be cited such as associated infections of the gall-bladder and appendix, which suggest that gastric ulcer may be due to streptococci.

122 South Michigan Avenue.

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**Then as Now.**—We are prone to surround the past with a kind of mystic glamor. We do not give honor where honor is new, but reserve our panegyrics for times and methods whose inaccessibility denies all chance of refutation. For example, we think the middle ages knew something about toxicology. So they did, but not a tithe of what we vaguely give them credit for. The old apothecary was not a pocket Borgia. Men were asked out to dinner and they sometimes died after it. But *post cibos* is not necessarily *propter cibos*, and one man's meat was not always poison for another. There was not always death in the pot. If we look at a sixteenth-century menu we have a general feeling, not of amazement that men should occasionally die after a banquet, but rather of surprise at the survivors. Then it is probable that modern surgery would have saved some of these moribund postprandialists—that perforation, not poison, ushered them into the *Ewigkeit*. In fact, these terrible toxicologic tales suffer from exaggeration. The morality of the times demanded sudden death in convenient form, and an alleged supply arose. It is much the same as if our day was judged by its patent-medicine advertisements. Reading them, a truthful age would sigh and offer illimitable gold for what we can buy for 1s. 1½d. As a matter of fact, we do not buy them. We know that some men are liars now, but we forget that there were liars in those days.—*Med. Press.*

# MILIARY TUBERCULOSIS OF THE PLACENTA

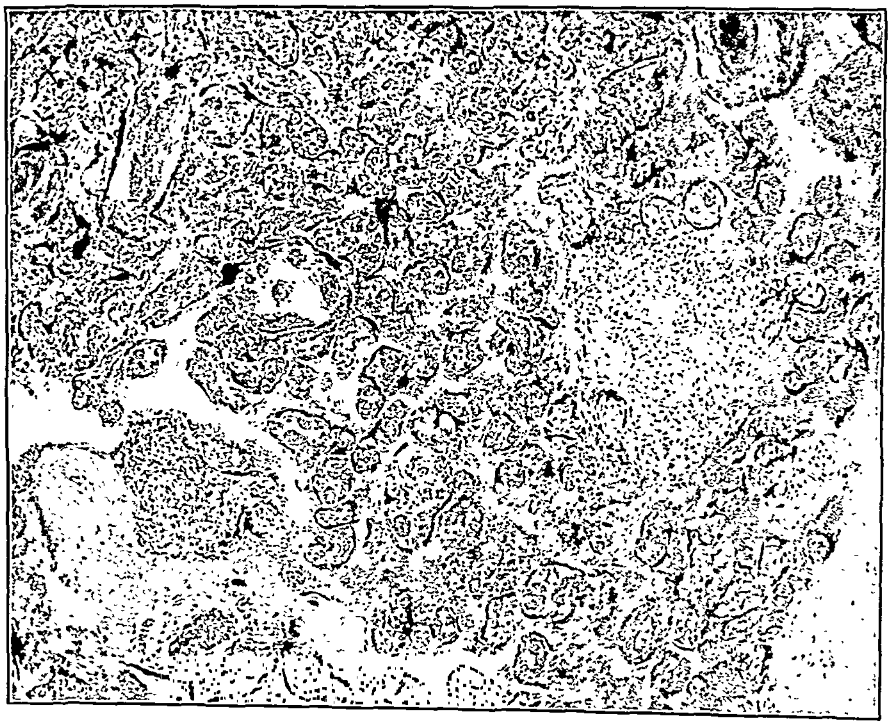
## WITH INCIPIENT PULMONARY TUBERCULOSIS OF THE MOTHER BECOMING LATENT AFTER BIRTH OF CHILD

ALDRED SCOTT WARTHIN, Ph.D., M.D.
Professor of Pathology and Director of the Pathological Laboratory, University of Michigan, Department of Medicine and Surgery
ANN ARBOR, MICH.

The case recorded here is of great importance in that it demonstrates the possibility of the transmission of tubercle bacilli to the fetus from a mother having an unrecognized latent tuberculosis of one apex. In the cases of placental tuberculosis recorded in the literature up to the present time there is no reported instance of such an occurrence; all of the cases of placental tuberculosis are given as occurring in association with advanced pulmonary or acute miliary tuberculosis of the mother. Tubercle bacilli, however, have been demonstrated by the antiformin method in placentas coming from mothers with incipient tuberculosis of the lungs, but no histologic evidences of tuberculosis were found in such placentas, and no congenital transmission of the disease to the offspring has been shown beyond doubt to occur in such cases.

It has been generally assumed that the entrance of tubercle bacilli into the blood-stream and their lodgment in the placental sinuses is a rare event, likely to occur only in pregnant women showing a late stage of pulmonary tuberculosis. If it can be shown that in pregnant women who have incipient pulmonary tuberculosis lesions the bacilli may enter the circulation under the influence of pregnancy and cause a miliary tuberculosis of the placenta or congenital infection of the fetus, the sociologic and eugenic aspects of the transmission of tuberculosis from parent to child become greatly increased in importance. It is generally recognized that the influence of pregnancy on maternal tuberculosis is bad; and observations are only too frequent of the kindling of incipient and latent pulmonary lesions and the exacerbation of more severe processes through this factor. While the majority of writers on tuberculosis concede that pregnancy acts unfavorably on the disease so far as the mother is concerned, practically all unite in minimizing the dangers of congenital transmission to the progeny of such tuberculous mothers, and this in spite of the not slowly accumulating cases of placental tuberculosis. For that reason especially I regard this additional case of placental tuberculosis discovered in my laboratory as of very great importance in throwing more light on the possibility of such a transmission.

All placentas obtained in Dr. Peterson's obstetric clinic in the university hospital are subjected to a routine gross and microscopic study in the pathologic laboratory. During the course of such routine examination, a placenta sent to the laboratory on Oct. 28, 1912, was found by me, on microscopic examination, to contain miliary tubercles in practically every section. Inasmuch as the history of the mother sent with the placenta made no mention of the existence of tuberculosis or the possibility of such disease in her, my interest was at once excited in the case, and it was studied from all possible angles. The history of the mother as given was entirely negative as to tuberculosis, as follows:



Two miliary tubercles from placenta; one, at the right, is healing; at the left is one more recent. epithelioid and situated on the chorionic stem; a latent lesion was in right apex of mother.

Miss A. B., a domestic, aged 20, was admitted to the University Psychopathic Hospital in February, 1912, with "hysteric insanity." At the age of 18 she had measles and scarlet fever and since has been very "nervous." There is no family history of tuberculosis and the patient, so far as she knows, has never been exposed to the disease. When she entered the hospital she gave a rather definite history of gonorrhea. Physical examination in other respects was negative except that she was found to be pregnant and was referred to the maternity ward, where after an apparently normal pregnancy she gave birth to a viable child on October 28. The placenta was tagged with the mother's name as soon as delivered and the course of the specimen is known without chance for error. When the diagnosis of miliary tuberculosis of the placenta was returned the mother was referred to the medical clinic for a thorough examination. The findings again were negative except that at times the pulse-rate was rather rapid (108) and on exertion she had a slight dyspnea.

*Examination* (by Dr. Hewlett Nov. 13, 1912).—Patient was referred for chest examination on account of miliary tubercles having been found in the placenta. Examination of chest shows that the right apex behind shows slight increase in fremitus, beyond the normal difference, slight impairment on percussion and somewhat harsh expiration. There are no râles. No active tuberculosis is found in the lungs, but there is some suspicion of a healed process at the right apex.

*Examination* (by Dr. Schmidt).—Eyelids are slightly puffy; hands are cold and clammy, with slight cyanosis of the finger tips. No enlarged lymph-nodes are found in the neck. The right upper chest expands less than the left. Litten's sign is not seen on either side. The right upper is not so full below the clavicle as is the left upper. Expiration is rather harsh over the right upper in front. The back shows slight impairment over the right upper with slight increase in tactile fremitus, as well as of whispered and spoken voice. Expiration is somewhat increased over the right upper behind. No râles are heard.

*Tuberculin Tests.*—There is a slight reaction to 25 per cent. in ninety-six hours (von Pirquet).

*Subcutaneous Test.*—Two mg. of tuberculin were injected at 10 a. m., November 5; at 2 p. m., November 6, there was slight redness around area of injection, and area was very tender. Highest temperature was 99.2 F. Dec. 7, 1912, patient was given 5 mg. of tuberculin, subcutaneously. On noon of the following day, temperature reached 99.7 F., falling to normal toward evening. The area of injection was red, indurated and tender. No râles were heard.

Roentgenoscopy reveals slight increase of root shadows but no definite sign of tuberculosis.

Medical examination shows a positive *tuberculin test*, a suspicious right apex, but no evidence of active disease.

From these examinations it is evident that the patient has had an incipient tuberculosis of the right apex, now no longer active. It can be inferred that earlier in pregnancy this apical lesion was active for a time, and that bacilli then escaped into the blood-stream and into the interchorionic spaces. This assumption is supported by the character of the placental lesions. In practically every section made of this placenta there were miliary tubercles, in all respects characteristic histologically. The average section contained from four to six tubercles. Very few of these tubercles were recent ones. No absolutely fresh miliary thrombi, such as characterize the early miliary tuberculosis of the placenta, were found. The majority of the tubercles were epithelioid in type with a tendency to healing, as shown by the development of a more mature connective tissue in and about the tubercle, some of the tubercles appearing more fibroid than the connective tissue of the villi. Giant-cells were not frequent. Many of the tubercles showed no caseation or only a slight central caseous change; only a few showed a marked central caseation. Tubercle bacilli could not be found in the epithelioid and healing tubercles, but were demonstrated in small numbers in the caseating tubercles. There is, therefore, no doubt as to the nature of the process. The healing tubercles are easily distinguished from small infarcts by their sharply circumscribed borders and by the fibroblastic proliferation of the villi included in the primary intervillous thrombus to form a compact epithelioid mass. When transition stages from the earliest form of the placental tubercle up to the healing stage are present, as in this material, there is little likelihood that any one who is familiar with the histologic characteristics of placental tubercles would hesitate in immediate recognition of the nature of the process; but if the healing forms alone were present and in small numbers there might be difficulty in such recognition. There are, however, but two things that need to be considered in the differential diagnosis: small localized areas of syphilitic chorionitis and small infarcts showing reparative changes. In the former the syphilitic process involves only the stroma of the villi, and the villi are not fused into a solid fibroblastic or fibroid mass; in the healing infarct the villi may be fused, but there is no fibroblastic formation, or only the slightest, between them.

The healing tubercle, on the other hand, may show outlines of some villi fused into an intervillous epithelioid or fibroblastic proliferation. In this case all stages of tubercles were present, although the majority were in the healing stage, and the presence of tubercle bacilli makes the diagnosis absolutely certain, although the histologic changes are in themselves sufficiently characteristic.

This case, therefore, presents a placental miliary tuberculosis of a low virulence, the majority of the tubercles being in a healing stage. It is very probable, then, that in the earlier months of pregnancy, most likely in the third or fourth month, a latent tubercle in the right apex became active, gave access to the blood of tubercle bacilli that lodged chiefly in the placenta, and produced there lesions that showed a tendency to heal. What other lesions were produced in the body of the mother we do not know. When she left the hospital she showed no signs of any other localizations, and unfortunately no additional history of her or her offspring has been obtainable. This report shows that even in the case of an unrecognized latent lesion in the lung of a pregnant woman tubercle bacilli may enter the circulation and produce a miliary placental tuberculosis. If this is possible it is also possible that under such circumstances the bacilli may pass the placenta and enter the body of the fetus. This case also emphasizes a point that I have made in previous papers on placental tuberculosis, that there is apparently some especial resistance on the part of fetal tissues to the tubercle bacillus, since tubercle bacilli have been found in large numbers in the liver and blood of infants without any histologic appearances of tuberculosis. The low virulence of the placental infection in this case may possibly be explained as the result of such a relative immunity on the part of the placental tissues. On the other hand, as the mother did not develop a miliary tuberculosis, the bacilli may have been of a feebly virulent strain (bovine?), or the number in the maternal blood-stream was small, and those found lodgment only in the placenta.

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# ABDOMINAL ADHESIONS *

R. C. COFFEY, M.D.
PORTLAND, ORE.

Every surgeon of experience has been impressed by the fact that certain patients are apt to form extensive adhesions following the simplest operation, done under perfect aseptic conditions, while other patients fail to form adhesions no matter how much the traumatism, nor how imperfect the technic. He has also found that certain patients will seemingly withstand a great amount of sepsis, while others die from very slight infections.

I have done a great deal of experimental work in the abdomens of both hogs and dogs, and have been impressed by the fact that hogs form extensive adhesions with the slightest provocation, while dogs do not form extensive adhesions as a rule. I have been equally impressed by the fact that hogs rarely die of sepsis, while dogs are very susceptible to infection, as proved by the fact that the farmer unsexes his sows without any preparation; without even washing his hands, which often contain every germ known to bacteriology; uses a piece of twine which he may find in the barnyard for closing the abdomen, and yet rarely has suppuration in the abdominal wound, and almost never has an animal die from peritonitis; while on the other hand, it is found that in unsexing bitches under the same circumstances, the great majority of them die. In other words, the hog with his tremendous resistance and rapid reparative processes, forms adhesions, but these adhesions are the result of the same beneficent process which so perfectly destroys the septic material. On the other hand, the dog dies because of a lack of these elements and process which form adhesions. A statement may then be made, that it is better to be a live hog with adhesions than a dead dog without adhesions. Adhesions may play a beneficent rôle or a harmful rôle. The process is beneficent in the first place, but in certain instances the adhesions may become harmful after their beneficent office has been fulfilled.

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* Read in the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

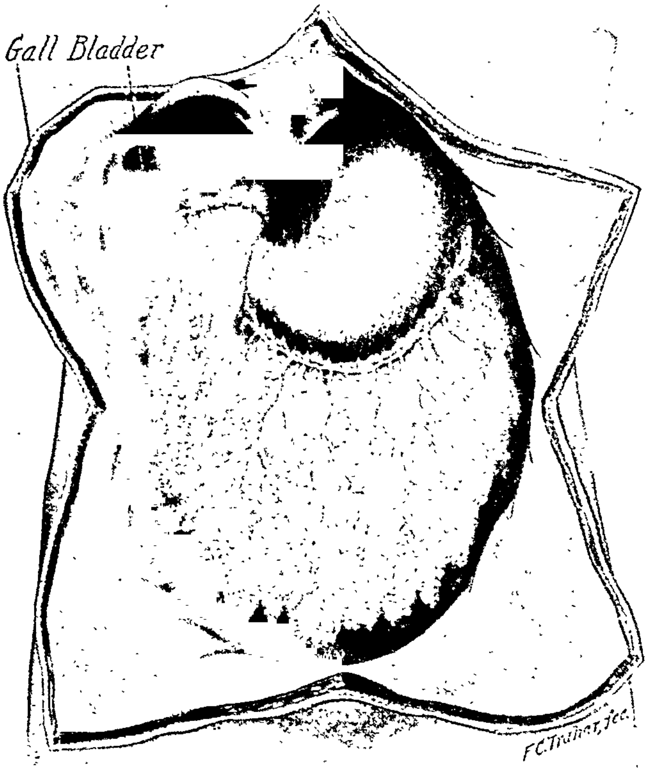

Fig. 1.—Reflected free edge of greater omentum sutured to lesser omentum for the purpose of separating the gall-bladder from the duodenum, thus preventing the reformation of adhesions.

It is true in all the practice of medicine and surgery, that the physician's work is chiefly auxiliary. He cannot prevent the formation of adhesions, and it is well; but he can modify an excess of adhesion forming, or remove the harmful adhesions after they have formed.

About four years ago the late Joseph Price read, before the Southern Surgical Association, a paper entitled "Surgical Junk," in which he discussed the postoperative adhesion question. "Surgical junk" is a very expressive term, for the adhesions following reparative processes simply represent material that was brought to the scene of action for a purpose, and now has no further use. I have had the literature of this subject completely abstracted at the Surgeon-General's office. The most striking features of the literature are in its monotony and its inconsistency. All authors have discussed prevention, e. g.: all authors have discussed the wet and dry protective pads, one maintaining that he had performed 132 laparotomies with dry asepsis, with ten deaths, five of which were due to intestinal obstruction, while in seventy-six cases treated with moist asepsis, he had two deaths and no intestinal obstruction. An equally prominent authority reported 481 laparotomies with dry asepsis, and only one fatality from ileus, while with moist asepsis he had a very much higher rate. Other operators assert that exposure to the air is the principal cause of adhesions; others that trauma is the principal cause, and still others that sepsis is the chief cause. Every variety of lubricant that has ever been known has been used by ardent advocates to prevent adhesions, and condemned even more ardently by others who have tried them. Some have used prepared membranes with good results, while others equally prominent get no results. Some have no adhesions by using cathartics; others get equally good results by absolute rest treatment. By carefully considering all the literature which has been written, along with my own limited personal observations, I think we may safely reach the following negative deductions:

1. The choice between the wet and dry pad is not vital, if equal care is used in their use.
2. Oils and all lubricants are worse than useless in the prevention of adhesions.
3. Specially prepared membranes and other foreign bodies have not proved equal to the claims of their advocates.
4. Cathartics following operation probably do more harm than good as a rule, although at times they may be of benefit.

On the other hand, we are safe in the following positive deductions:

1. Thorough asepsis.
2. As little handling as possible.
3. Avoidance of all traumatism and exposure to the air, as far as can be.

All of these agencies and precautions undoubtedly have an influence, but of greater importance is the special resisting power of the patient. Adhesions forming under given circumstances probably are in exact ratio to the patient's power of resistence to sepsis.

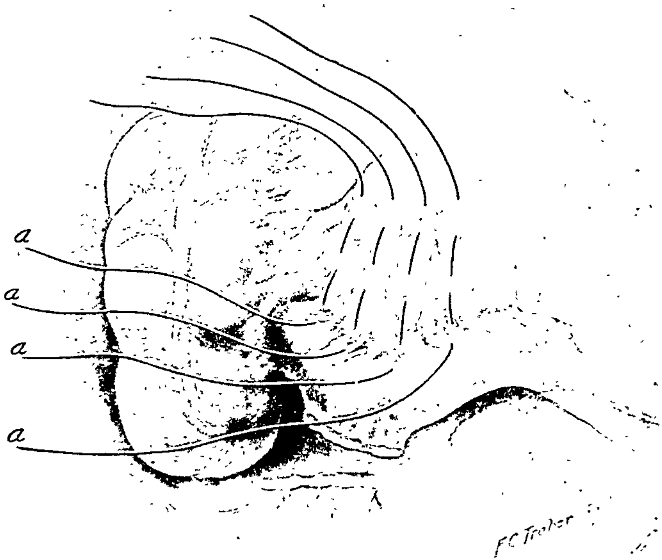

Fig. 2.—Method of applying purse-string sutures for the purpose of shortening the mesentery of the ileum to prevent reformation of Lane's bands; (a), purse-string sutures.

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ment (Fig. 6); (*c*), in cases of ptosis which existed prior to an inflammatory process, by which process the omentum has been firmly fastened to the pelvic organs or to an operative wound in the lower abdomen, in such a way as permanently to fix the stomach and transverse colon low down in the pelvis, and thus prevent their proper emptying (Fig. 5). In these cases the greater omentum is sutured to the abdominal wall midway between the umbilicus and ensiform cartilage, and the upper abdomen expanded, thus curing the ptosis as well as the evil effects of the adhesions.

4. In cases of excessive adhesions in the pelvis or other parts of the abdomen, in which a loop of intestine goes into a mass of adhesions and emerges, leaving plenty of clear intestine above and below, by far the best plan is to leave the adhesion alone and short-circuit by making a lateral anastomosis between the two limbs, as shown in Figures 7 and 8, which operations I have done repeatedly, when the adhesions had gone to the point of producing intestinal obstruction. I may state that all of these patients have remained in perfect health, although the adhesions were permitted to remain without disturbance.

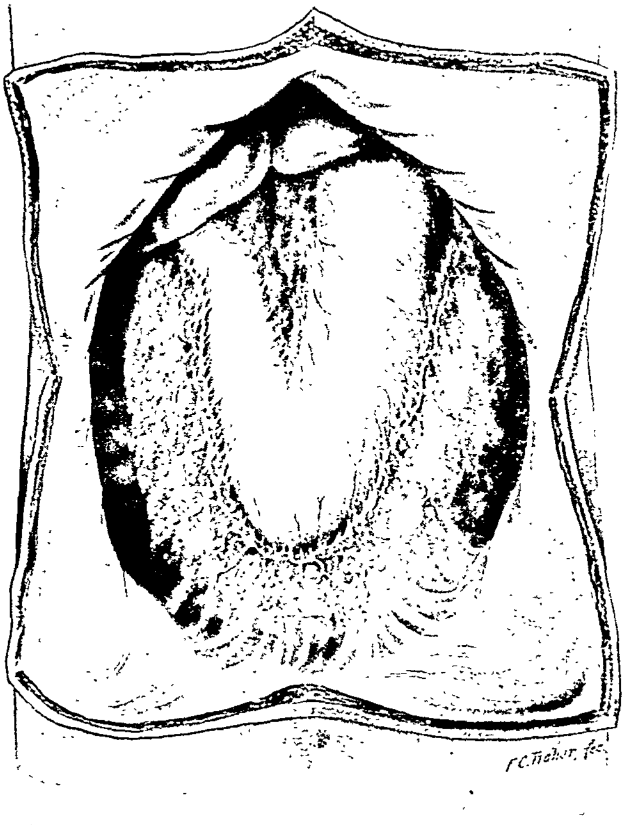

Fig. 5.—Midline ptosis made permanent by adhesion of the greater omentum to the lower abdominal wall or pelvic organs following inflammatory condition or surgical operation in patient who was previously afflicted with ptosis.

5. In addition to the foregoing methods, I now submit a fifth method of treating adhesions in well-marked adhesion-forming patients, in whom adhesions recur after operation, in increasing quantity. It is the insertion of a protected gauze pack. For the past ten years I have used a gauze pack in certain septic conditions, with a great deal of satisfaction. In my early cases I used the gauze wicks without protection, which had the disadvantage of sticking to the loops of intestine and often paving the way for subsequent hernia, for I found that in a little over 25 per cent. of cases thus drained developed hernia later. During the past six years I have protected the gauze pack by several layers of rubber tissue, and by so doing I find in examining my records that the hernias have been reduced to a little more than 5 per cent. This drainage has been used in cases of acute sepsis, involving an area which could not be removed. I have used this pack during the past ten years in more than two hundred cases. In cases in which it has been necessary to open the abdomen for some other reason afterward, I have been particularly struck with the fact that adhesions are absent to a remarkable degree, and I believe I am safe in saying that the adhesions are less than in the average clean case in which the abdomen is closed without drainage. After observing this absence of adhesions following the use of the quarantine pack, I decided

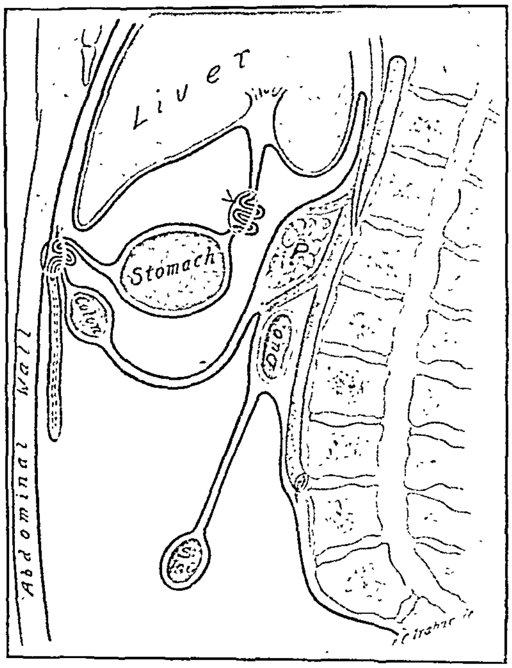

Fig. 6.—Lesser omentum shortened (Beyea). Greater omentum sutured to abdominal wall (see *Surgery, Gynecology and Obstetrics*, October, 1912).

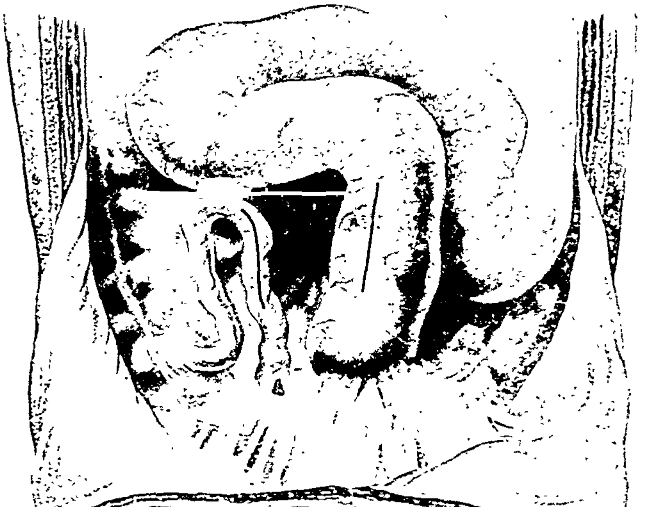

Fig. 7.—Relief of complete obstruction, due to extensive pelvic adhesions, by short-circuiting.

o try it for cases of extensive adhesions, in which the patient had been repeatedly operated on. Every surgeon knows these cases, and knows how he opens the abdomen, dissects adhesions sometimes for hours, possibly opens the intestine several times, closes the intestinal wounds and closes the patient with fear and trembling, expecting sepsis to follow. Sepsis does not follow; the patient recovers temporarily, but soon begins to show evidences of the reformation of troublesome adhesions. He finally opens and repeats his dissection with the same results. In this class of cases the protected gauze pack does its best work. It is placed as follows:

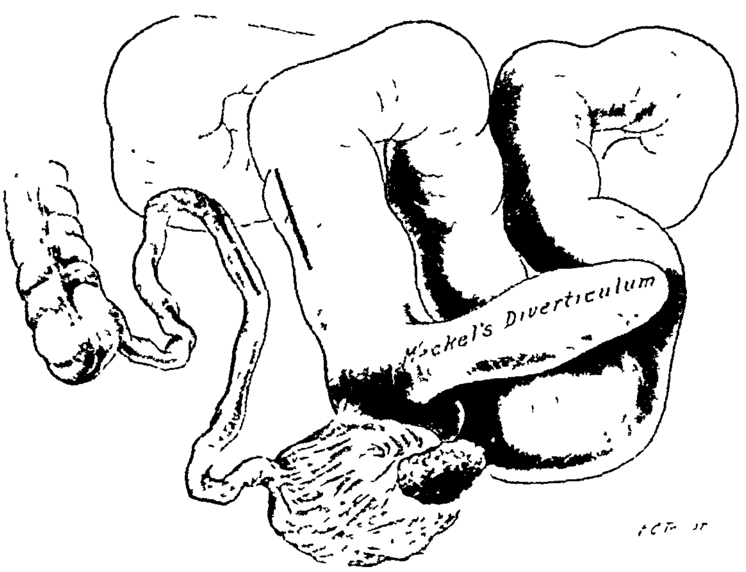

Fig. 8.—Relief, by short-circuiting, of complete obstruction due to adhesion of intestines around a mesenteric stone which weighed a little more than 2 ounces. Note Meckel's diverticulum.

### TECHNIC OF GAUZE PACKS

All the intestines must be temporarily packed far away from the infected or denuded area or organ. Gauze wicks the size of a finger should be laid straight, side by side, reaching entirely across the abdomen and coming out through the drainage opening. Four or five layers of gutta-percha tissue are then placed above the gauze and allowed to come out through the opening also. The intestines are now allowed to come down against the rubber tissue (Fig. 9). The omentum is drawn down, and if long enough is interposed between the rubber tissue and intestines (Figs. 10 and 11). The pack is brought out at the lower angle of the wound, and the upper part of the wound closed snugly around it, with combined layer and through sutures.

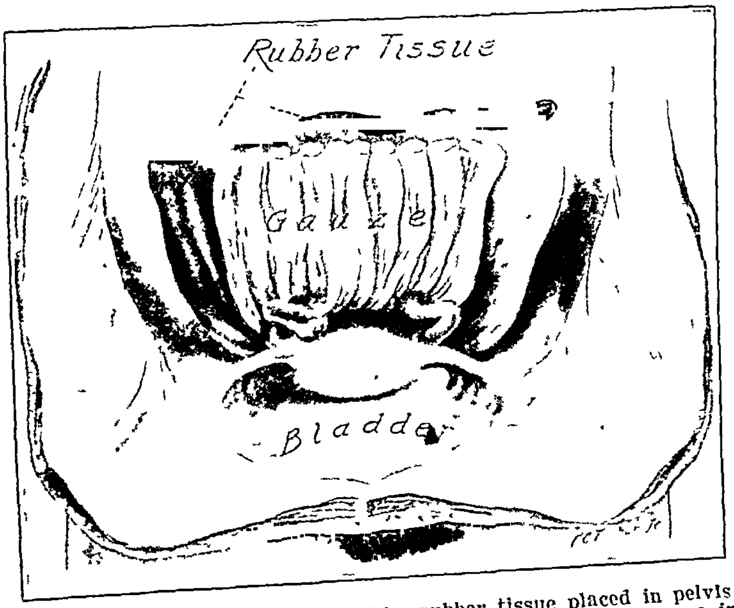

Fig 9—Gauze wicks protected by rubber tissue placed in pelvis Note that an infected tube has been split and allowed to come in contact with the drain. This procedure is not advisable in gonorrheal pus tubes

In my experience it has been better to attempt to remove half or all of the gauze wicks about the sixth or seventh day after the drain is placed. If the gauze is removed before the end of six days, it is usually done with difficulty. If it is allowed to remain more than ten days it again attaches itself and is removed with difficulty, so that at the end of about six days it will usually be found that the wicks are pulled out more easily than they are either sooner or later. At times I remove all of the gauze at this date, and at other times leave about one-third of it and take it out about three days later. I rarely remove the rubber tissue earlier than ten days or later than fourteen days. At this time I remove all of the rubber tissue and slip in a small soft rubber tube, tapered at the end, which prevents the adbomen from closing over the cavity before it is healed. This is allowed to remain a week or ten days, until the bottom of the opening has time to close in around the tube and make a straight sinus. If this last tube is not allowed to remain long enough, the wound heals on the outside and leaves a large unhealed cavity on the inside, which makes the wound very much slower in closing

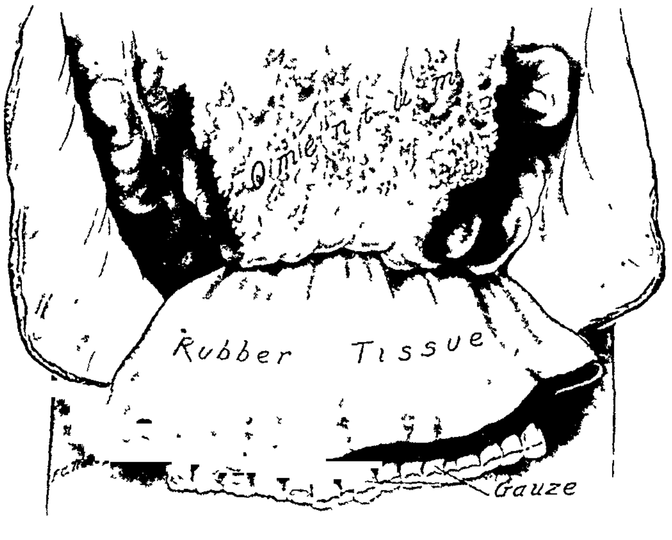

Fig 10—Protected gauze pack has been placed and omentum interposed.

About five weeks is the average time for a wound thus treated to heal entirely. I usually keep the patients in bed for about four weeks.

No procedure in all of my abdominal work has given more complete satisfaction. In no case has it ever been necessary to reoperate for adhesions after the use of the protected pack. The pack seems to serve two purposes. First, it rapidly drains off serum, and with it the adhesion-forming plastic material, which seems to be excessive in these adhesion-forming patients, so that there is not much material to form adhesions. Second, it creates double lines of granulation, which apparently are incapable of uniting with each other firmly.

789 Glisan Street.

### ABSTRACT OF DISCUSSION

Dr. J. H. Jacobson, Toledo, O.: Dr. Coffey's theory seems to me in direct contradiction to our ideas of the formation of abdominal adhesions. The work done by Dudley and Sargent is the best on this subject. They point out that adhesions are formed from plastic exudate thrown out on the intestinal walls about the site of the operation. They maintain that with proper drainage and removal of the serum and exudate adhesions are prevented. The other principle is that the introduction of all foreign substances or anything which will destroy the endothelium of the peritoneum will produce adhesions. The conclusions of Dr. Coffey seem to me in contradiction to these principles.

Can we account for the formation of adhesions in these cases? Will a timely operation, even in the presence of an enormous amount of infection, with properly placed drains lessen the tendency to adhesions? We can prevent the further destruction of the endothelial covering of the peritoneum and prevent adhesions? This is a most important principle and one which we should work on in doing abdominal surgery. It is important to do away with dry packs and to use the moist. In the gall-bladder operation, with the use of the Mayo-Robson position the abdomen is closed before the patient is put back in the horizontal position. We have noticed adhesion of the liver to the parietal peritoneum and part of the diaphragm. We have separated the adhesions and used the omentum. When it is necessary to use a substance to prevent adhesions in the abdominal cavity, Dr. Coffey has shown that he prefers that method to the use of foreign materials. I also wish to mention the danger of adhesions from the contact of the intestines with the iodin. Because of this, the skin should be covered with gauze so that the intestines will not come into contact with the skin. I am much interested in this quarantine pack because we are introducing into the abdominal cavity foreign material, and yet, apparently, with the draining off of the serum we prevent the reformation of adhesions. This is contrary to the usual view of the formation of adhesions. We must wait and hope that it will prove to be as Dr. Coffey has told us to-day.

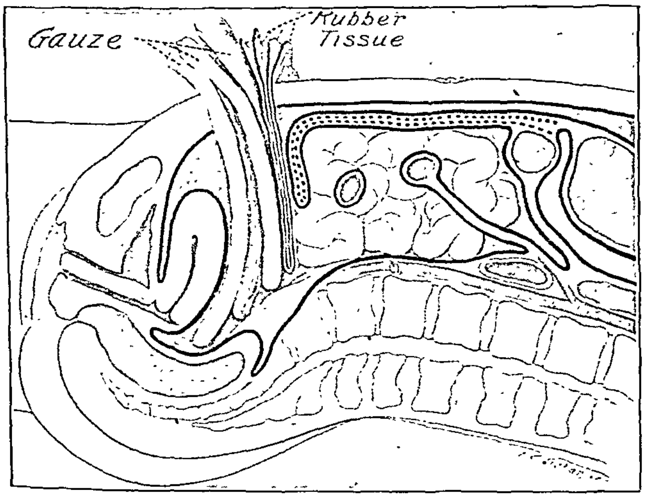

Fig. 11.—Scheme of protected gauze pack as applied to the pelvis for the relief of extensive adhesions.

Dr. John B. Deaver, Philadelphia: I have saved many lives by the procedure described by Dr. Coffey. I have had thirteen cases following appendicitis. All the patients were operated on and all recovered, and I did not interfere with the adhesions at all. That is masterly inactivity, conservative surgery. More radical surgery would be likely to result in disaster. In place of the quarantine pack, we formerly used rubber tissue. The principle is the same. There is no question at all that the convalescence is less interrupted and more permanent. I was also glad to hear Dr. Coffey say that he did not take the gauze out until from the sixth to the eight day. I tell my house-doctors to leave it in until it practically comes out.

Dr. Rufus B. Hall, Cincinnati: This gauze protection in pus cases is a life-saving operation. Do not be afraid of adhesions if you use gauze. I have used this method for twenty years. I did not at first protect with rubber tissue, but find it a distinct advantage. I learned early in my work not to remove the gauze too soon. I handle it as Dr. Deaver does and wait until it becomes loose; in from six to seven days it can be removed easily. The hernia, if it occurs, can be treated afterward without trouble. I tell my patients that I expect them to have a hernia, but that it can be repaired. By this method we can save lives that would otherwise be lost.

Dr. C. E. Cantrell, Greenville, Tex.: Do not break up these adhesions, if you can secure a loop of intestine for anastomosis, because otherwise some of the bowel will be denuded of its peritoneal covering. I have worked for hours trying to cover raw surfaces with peritoneum. I have in mind a case in which we operated a fourth time. We did not disturb the adhesions, but did an anastomosis and the man recovered.

Dr. Henry Boxer, Birmingham, Ala: The principal thing in abdominal surgery in the prevention of adhesions is to cover all raw surfaces, no matter how much time it takes, unless the patient's condition is bad and we have to finish the operation in a hurry. In pelvic surgery, when adhesions of the intestines are extensive, Dr. Coffey has mentioned that he does not disturb the adhesions, but makes an end-to-end anastomosis. If there is no obstruction to the intestines, the best plan is to leave the adhesions alone rather than to disturb them by making an end-to-end anastomosis, which sometimes proves disastrous to the patient.

Dr. R. C. Coffey, Portland, Ore.: The man who knows nothing but the drainage-tube and can use nothing else evidently does not cover the fundamental principles of drainage. The man who can use nothing but gauze and does not know when and when not to use gauze is not familiar with the fundamental principles. I think that the most exhaustive study I ever made on anything was on the matter of drainage in following the work of Clark and Yeats. They both reached the conclusion that drainage was a bad thing. They said it would not drain pus and blood, that it created a great deal of serum and was liable to infection. I admit that it forms serum in exact proportion to the amount of peritoneum that is touched by the foreign body, but the serum is brought there to form adhesions, and if we deliver it slowly by a small wick of gauze we shall produce more adhesions than if we had not touched it. On the other hand, if we drain the serum off as rapidly as it is formed we rob this area of all its adhesion-forming substance. That serum, however, is brought to the surface only in proportion to the amount of gauze that comes out through the wound. Clark used a pack of gauze folded on itself like the folds of a fan. He found large amounts of serum and adhesions after this method of drainage because it produced a large amount of serum and delivered only a small amount to the surface. If we put in enough to deliver the serum as fast as it forms, we have nothing with which to form adhesions. This is not true in the treatment of sepsis. There it is possible to operate in the most acute case with immunity. I did not have a fatality in six years when I used the method in acute pyosalpinx in which there was pus. If we deliver this serum to the surface as fast as it is formed, we keep the intestines back and have no adhesions. We do not find out by theory, but by having to reoperate in cases in which we have drained in this way. In these cases we find almost complete absence of adhesions, while, in cases drained by a simple tube or a small piece of gauze, adhesions are numerous. This, therefore, is the principle we must deal with.

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**Health Ordinances with Inadequate Appropriations.**—This disposition on the part of our lawmakers to demand brick of the medical profession without having furnished any straw with which to make it, is almost too ridiculous for judicious discussion. The city of Fort Worth, for instance, after many years and in answer to the earnest demand of the women of the city, agreed to establish a board of health, consisting of five members, two of whom must be physicians, with advisory authority only and to serve without pay. At the same time, the commission agreed to pay a lawyer $1,000 to prosecute a case of alleged graft, and to extend to him actual authority. The difference is that there were no fanatics to rise up in their indignation and charge somebody with something in opposing the proposition. Doubtless similar conditions exist in other cities, and it is to be hoped that in the course of time public opinion will bring about a wholesome change of policy in this respect.—Editorial *Texas State Jour. Med.*

# A COMPARISON OCULAR.*

DANIEL J. HEALY, M.D.
LEXINGTON, KY.

While working on certain changes in the tissues of the guinea-pig, it proved of great advantage, in observing the finer changes, to use two microscopes side by side, one showing the normal tissues and the one the abnormal tissues. On Jan. 29, 1912, I communicated with Mr. Edward Bausch, suggesting that a microscope be so equipped with two objectives, "that on looking through the eyepiece one would see half of the field of each objective." The Bausch and Lomb Optical Company kindly worked out the idea, using, however, two microscopes and one comparison ocular, which method is more practical and less expensive than that of two objectives on one microscope.

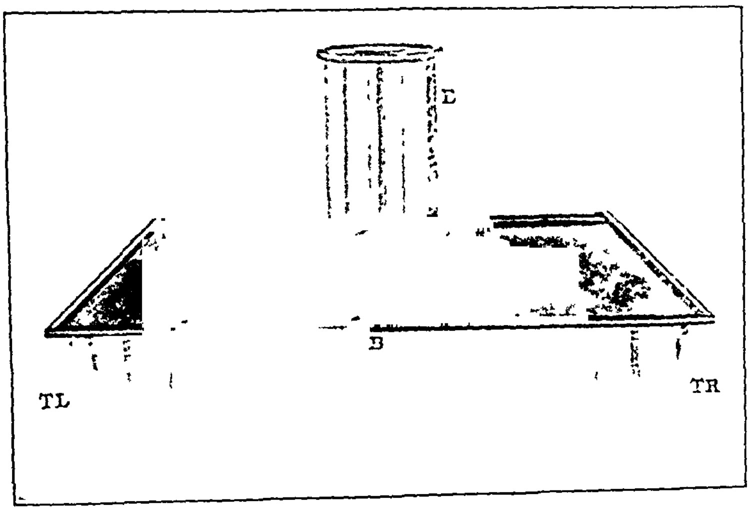

Fig. 1.—The comparison ocular. The ocular consists of a set of reflecting prisms within the box *B*, which carries the eyepiece *E*, in the middle, and a short tube at each end, marked *T-L* and *T-R*. The tube *T-L* fits snugly into the body tube of the microscope stand to the left, while the other tube, which is of smaller diameter, moves freely within the body tube of the stand to the right.

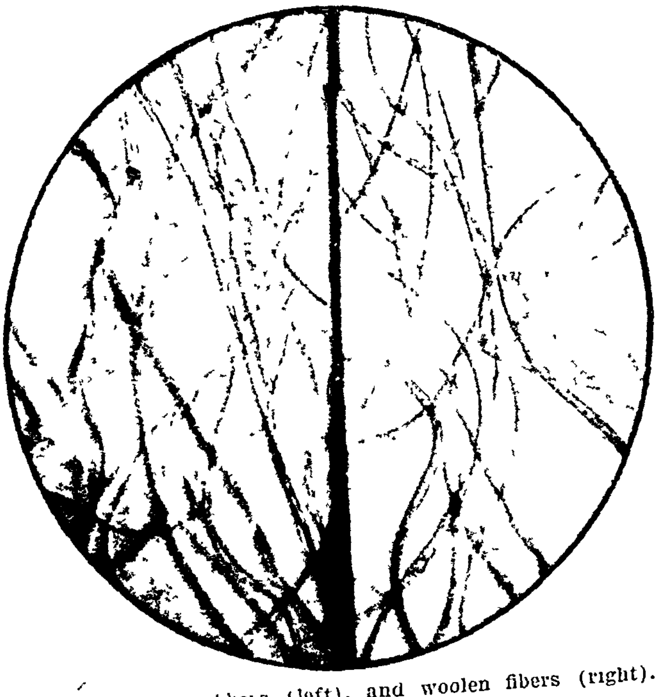

Fig. 3.—Cotton fibers (left), and woolen fibers (right).

The purpose of the comparison ocular is to permit the examination, side by side in the same field of the microscope, of two specimens, as, for example, a normal tissue and a pathologic tissue, the field being divided into two halves in which the objects on the stage are imaged, the images being separated by a straight line.

Two identical microscopes are placed side by side (Fig. 2), the draw tubes are removed, and the collars of the body tubes replaced; the comparison ocular is now attached by fitting the short tube *TL* snugly into the body tube of the instrument to the left, at the same time slipping the loosely fitting tube *TR* into the body tube of the instrument to the right. To avoid binding, the tube of the instrument to the right must be nurled down until the objective nearly touches the slide. Then the left instrument, which carries the ocular, is focused, after which the right instrument is focused with an upward motion.

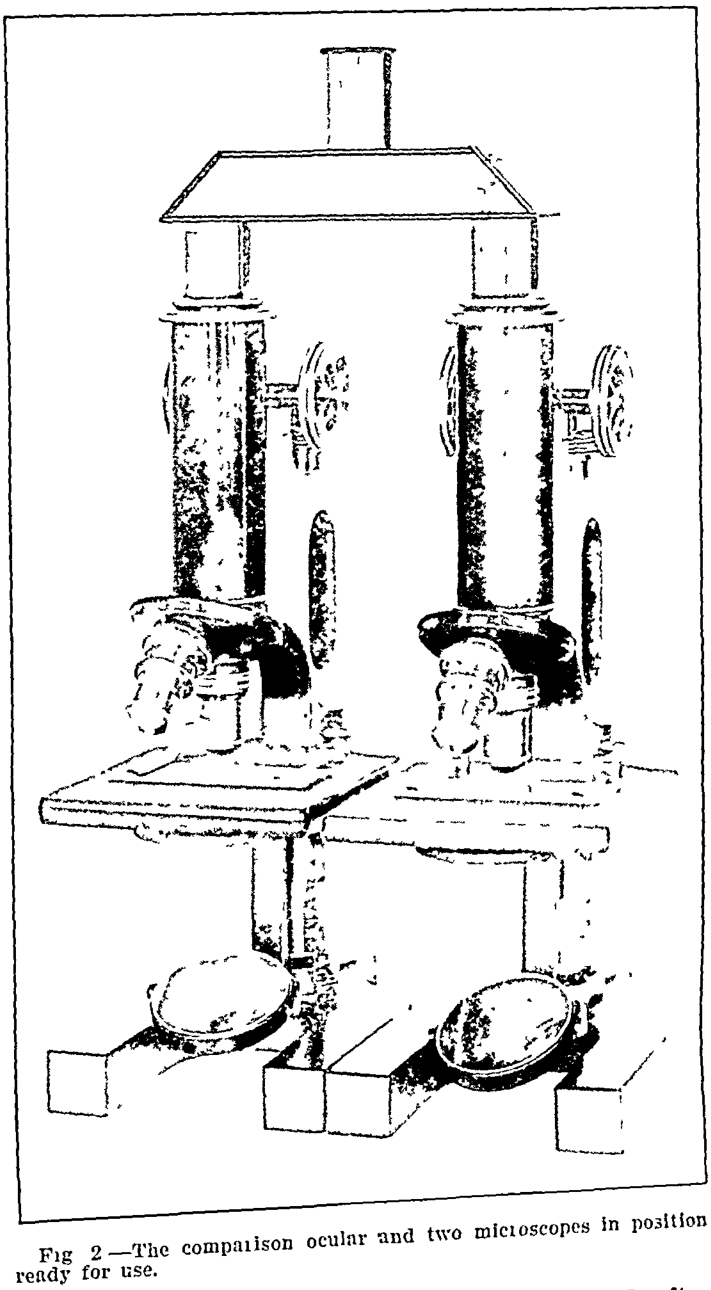

Fig. 2.—The comparison ocular and two microscopes in position ready for use.

The following illustrations are photomicrographs taken through the comparison ocular; direct diffuse daylight, from a north window, was used to illuminate the field; 16 mm. lenses were used, which with the comparison ocular gave a magnification of seventy-five diameters; the exposure was forty seconds.

The comparison ocular has been in use in this laboratory since May, 1912, and has proved valuable. Recent articles describe a comparison microscope devised in Ger-

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* From the laboratory of the Kentucky Agricultural Experiment Station.

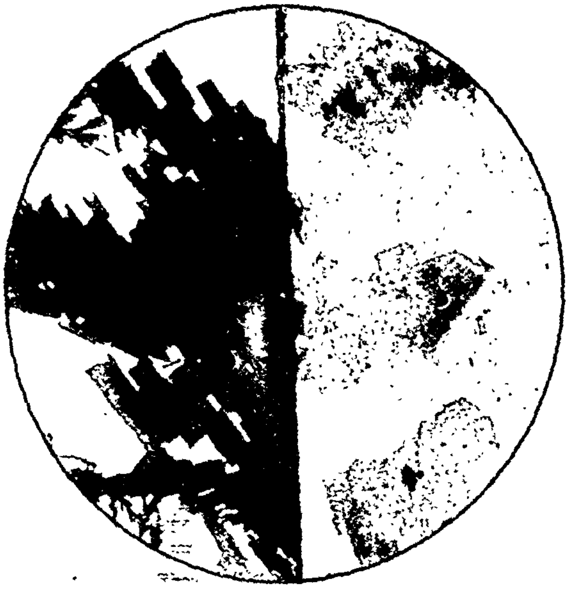

Fig. 4.—Crystals of morphin periodid (left), and cocain permanganate (right).

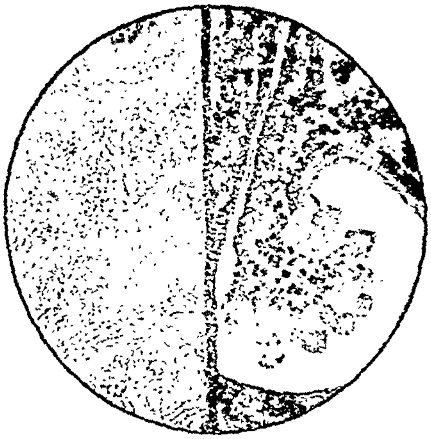

Fig. 5.—Cross-section of timothy (left), and Hypericum (right).

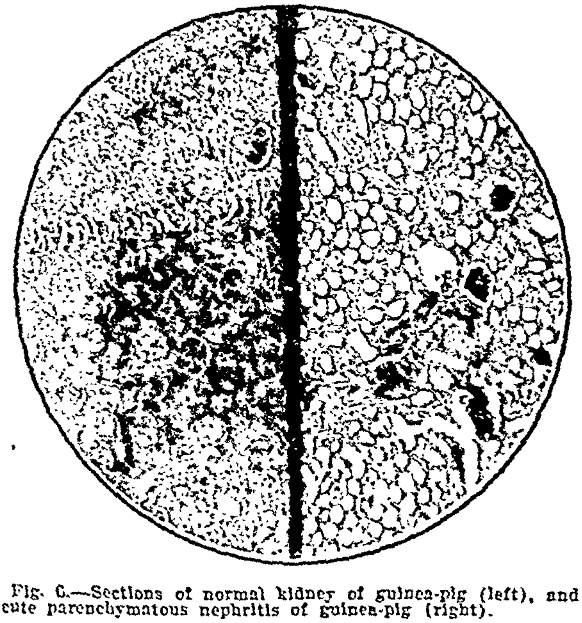

Fig. 6.—Sections of normal kidney of guinea-pig (left), and of acute parenchymatous nephritis of guinea-pig (right).

many by Dr. W. Thörner.[1] As will be observed, we were using the comparison ocular six months before Dr. Thörner's article was published. The comparison ocular has the advantage in that it does not require a specially constructed microscope like the German instrument. thus being much less expensive and quite satisfactory in operation.

# MYOTONIA ATROPHICA *

FOSTER KENNEDY, M.D., F.R.S. (Edin.)
Chief of the Neurological Clinic and Instructor in Neurology, Cornell University Medical College
NEW YORK

The rarity of this curious muscular degeneration is the excuse for the report of a single case. Myotonia congenita, so-called Thomsen's disease, is not very uncommon, but the combination of increased tonus in some muscles with a primary flaccid palsy in others in remarkably constant distribution is so rare that but four cases have been reported[2] as yet in the medical literature of this country.

The disease is apparently peculiar to persons in middle life, is of a very slowly progressive character, and, in rather more than half the number of cases, is of familial type. The symptom-complex is so constant and so characteristic that, when once understood, recognition of subsequent cases becomes simple.

## REPORT OF CASE

*History.*—G. F., an unmarried Swiss, aged 46, was admitted March 27, 1913, to the Cornell Division of Bellevue Hospital, New York, and was placed under the care of Dr. Gilman Thompson.[3] The patient's parents had both died in old age. Three brothers and three sisters were in good health, but one sister, a resident of the United States, had arthritis deformans. There was no neuropathic family history. Neither the patient nor his sister knew of any near or collateral relative affected in any way similarly to the case under consideration. For fourteen years he had been employed as a farmer in New England. His habits were regular and his general health good. His consumption of alcohol was limited to two or three glasses of beer a day. He denied having had any venereal disease and said that his previous health had always been good.

In 1893 his left cornea was injured by a spark which fell on it from a passing engine. In 1887 his hands and feet are said to have been frost-bitten. In November, 1911, after hard work during a heavy harvest season, he began to have cramplike pain in the lumbar region. These pains were at first intermittent and rare, but later became more frequent, so that at the time of examination he constantly complained of their presence. He could remember no injury that would account for this condition, which became more severe when he worked in a bent posture. He strenuously denied having any difficulties in his gait or in the use of his hands. There were no sphincter troubles. He had not worked for a year but had never been confined to bed.

*Examination.*—The patient's facial appearance was quite strikingly characteristic of the disease, and was the result of an incomplete ptosis of both eyelids, with marked hollowing of the temporal fossae and flattening of the masseteric region on each side (See illustration). The orbicular muscles were very weak and there was no movement in the temporal or masseter muscles. The left pupil was hidden by a corneal scar, the result of the injury previously spoken of. The reaction of the right pupil was normal. A well-marked and advanced attacks" in which he became greatly depressed. When he consulted me in December, 1904, he was complaining of indigestion, characterized by belching and peculiar pressure sensations which seemed to "radiate from the stomach upward through the chest and arms." These symptoms seemed to bear no relationship to the character of the food taken, but usually occurred one or two hours after meals, unaccompanied by pain or vomiting. At this time 26 pounds in weight had been lost within a period of four months. The appetite was not good. The bowels were regular, but not free, sometimes compelling the use of enemas. At times there was palpitation, which the patient attributed to "gas in the stomach." There was no dyspnea, edema or any nocturnal urination. From time to time dizziness was experienced on sudden change of position.

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[1] Literary Digest, Nov. 16, 1912; Scientific American, Feb. 15, 1913.

* From the Cornell Division of the Bellevue Hospital.

[2] Hunt, J. R.: Jour. Nerv. and Ment. Dis., 1908, lix, 209. Kennedy, Foster and Oberndorf, C. P.: The Journal A. M. A., 1911, lvii, 1117.

[3] Dr. Thompson kindly asked me to see this case, and by his courtesy I am permitted to use these notes.

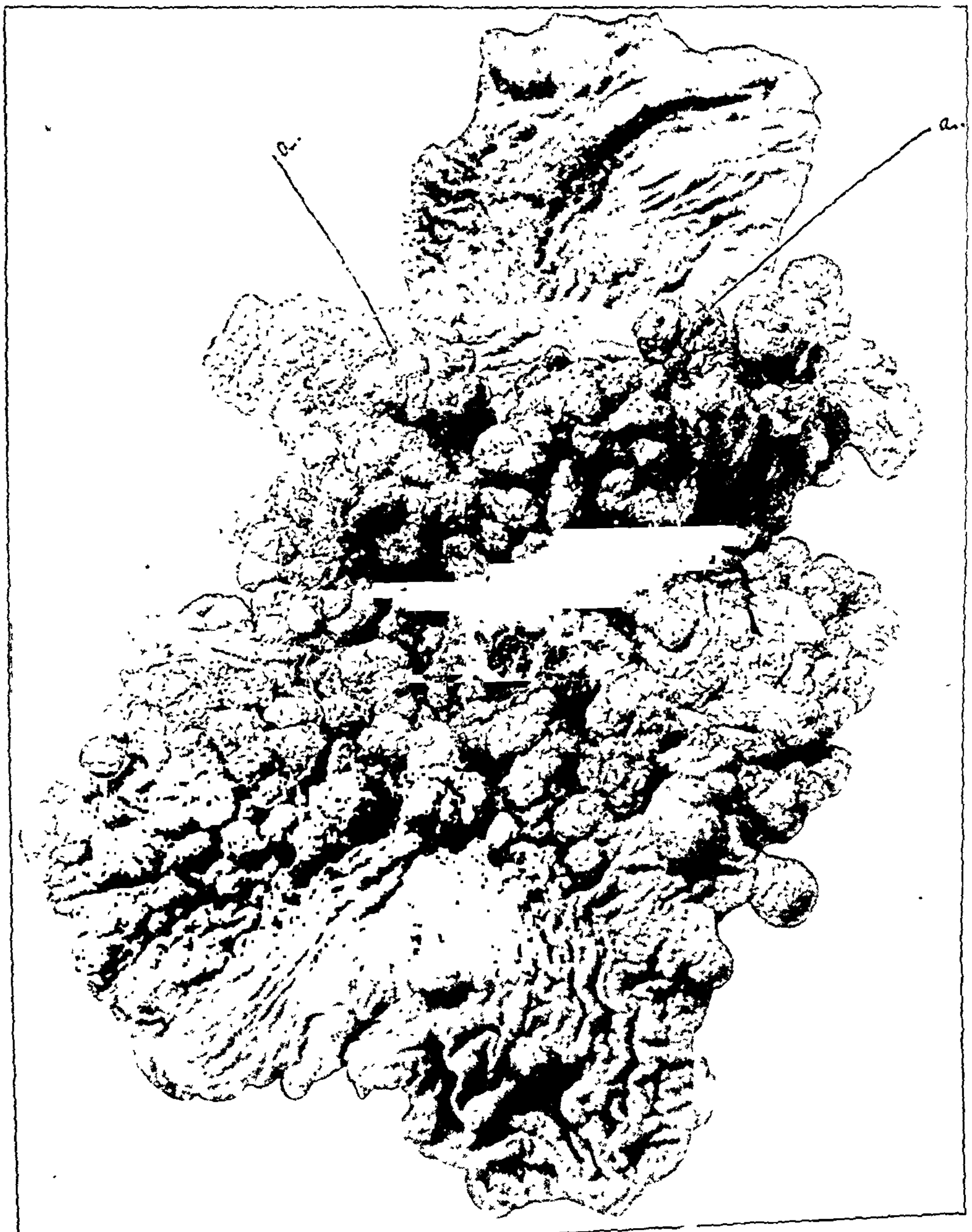

Fig. 2.—The stomach removed at necropsy showing the entire mucosa, with the exception of a small area near the cardiac orifice, literally covered with polyps; *a*, a large grape-like bunch of polyps, a portion of which had invaginated the pylorus.

*Examination.*—The patient was a man of medium height, of a florid complexion, weighing 178 pounds, still well nourished though showing evidence of loss of weight. The pupils reacted normally to light and accommodation. The patellar reflexes and the sensorium were normal. There was a low systolic murmur at the apex of the heart, not transmitted. There was no enlargement of the heart. The lungs were negative. The liver was palpable two fingers' breadth below the free margin of the ribs on deep inspiration and was of normal contour and consistency. There was no pain on pressure in the right iliac, right hypochondriac or epigastric region. At the diaphragmatic insertion were numerous small dilated vessels. There was no tumefaction, though the epigastrium bulged slightly and presented slight resistance to pressure. Inflation of the stomach revealed no enlargement or displacement. There were a few enlarged lymph-nodes in the left anterior cervical region and also in the groins. On the dorsum of the penis was a small non-indurated scar and a scar was also on the left hand, the result of the lesion previously mentioned. The urine was negative. Hemoglobin, 67 per cent.

After a test-breakfast removed Dec. 14, 1904, 1½ ounces of slightly acid contents were recovered, with free and combined hydrochloric acid entirely negative. Lactic acid was mildly positive. There was a slight increase in mucus. Microscopically, nothing was abnormal. Test-breakfasts taken Dec. 16, 18, 20 and 24, 1904, and Jan. 10, 13 and 24, 1905, constantly revealed normal motility with complete achylia gastrica and a slight increase of stomach mucus. The diagnosis of chronic, atrophic gastritis was entered at this time into the records.

*Treatment and Course.*—This was prior to the days of the Wassermann reaction, so in view of the history of the case and the presence of abnormal fundus findings as reported by the oculist, iodids were given, which were tolerated so badly that the patient soon discontinued them. He took an extended trip, and on his return home stated that he felt fairly comfortable. I did not see him again for a period of five years, during which time the general condition was such that he felt no need of consulting a physician.

The patient returned in February, 1909, complaining of pronounced gastric symptoms, characterized by intense pressure in the epigastrium from one-half to one hour after meals, followed by "gas pains," three or four hours later. He was often compelled to get up during the night and walk the floor until he could free himself of the gas accumulation.

Physical examination at this time revealed no particular variation from the previous examination, except, perhaps, that the general nutrition was much improved. There was, however, a marked change in the gastric contents, which still contained no hydrochloric acid and no pepsin, but abounded in large quantities of mucus. Many analyses were made between February and October, 1909, with practically the same findings. The mucus was much like finely divided, slightly coddled white of egg. It was practically impossible to lavage the stomach long enough to obtain wash-water free from mucus. Microscopically, there was an increase in yeast, though there was no branching. Almost invariably there were a few red corpuscles, many undigested and partially digested leukocytes, many long and short bacilli and at times traces of pepsin, varying from 14 per cent. to 40 per cent. (Hammerschlag). There was no food retention. Numerous examinations of the feces revealed no blood.

The patient obtained his greatest relief through lavage, which was given now at frequent intervals for several months. The quantity of mucus that could be obtained from the fasting stomach was simply amazing. Not infrequently the wash-water was tinged with blood toward the end of the process of lavage. This, naturally, was assumed to be due to the irritation of the diseased mucosa by the tube. In view of the fact that the ocular conditions were gradually getting worse, and on the assumption that the gastritis might be of luetic origin, the patient was given mercury injections and iodalbin, which were very well tolerated.

During the latter part of 1909, while the stomach was being lavaged, a small polyp about the size of a pea was expressed through the tube. It was perfectly round, smooth and unaffected by digestion, and showed definitely where the pedicle had separated. A microscopic examination showed it to be a simple benign adenoma. This naturally led to the supposition that there might be other small polyps in the stomach.

In 1910 the patient complained frequently of vertigo and this was attributed to the eye condition. There were also occasional attacks of diarrhea. A blood examination at this time revealed hemoglobin, 80 per cent.; leukocytes, 21,800; erythrocytes, 6,192,000; polynuclears, 67 per cent., large mononuclears, 16 per cent.; lymphocytes, 12 per cent.; eosinophils, 5 per cent., and red cells normal in appearance.

Test-breakfasts examined from time to time in 1910 revealed perfect motility, immense quantities of mucus containing many leukocytes, a total absence of hydrochloric acid and a mild degree of peptogenic power.

In the summer of 1911, while up North fishing, the patient developed an edema of the extremities and a rather marked degree of dyspnea, due to a relative insufficiency of the mitral valve, the result of overexertion. The condition improved under rest and digitalis, and when I saw him again in August he had a rather marked systolic murmur and intermittent heart-action, with an accentuation of the second pulmonic sound.

March 5, 1912, while in a hotel rotunda, the patient was overcome by a feeling of faintness and vertigo and fell unconscious. Shortly after this he vomited large amounts of blood, much of which was clotted. Before he could be removed to the hospital he had a large, perfectly black bowel-movement. Those present at the time think that he vomited at least a quart of blood. As soon as possible the patient was taken to the hospital. Temperature, 98.4; respiration, 20; pulse 120. There was no further vomiting, but the stools contained very large quantities of changed blood.

On the first examination at the hospital there was visible peristalsis and a palpable resistance in the pyloric region, much resembling the consistency of liver. On the following day with the hand resting lightly over the pyloric region to see if the peristalsis could be palpated, one could feel periodically the stiffening of the pylorus, and this was immediately followed by most peculiar movements under the hand, which resembled the movements of the small parts of a fetus. By stethoscope the movements could be heard as a distant rumbling noise followed by a squirting sound, as of a mixture of fluid and gas. The patient stated that the sensation could be experienced by fixing the mind on it, and, without any suggestion on my part, he described it "as the opening and closing of a valve." In view of this peculiar phenomenon, together with the previous findings of a small polyp in the washings, I concluded that a pedicled polyp had invaginated the pylorus, extended through into the duodenum and that either through laceration or the separation of a portion of it hemorrhage had resulted. The stools were watched carefully, and within three days a portion of a polyp about the size of a walnut was found, irregular in outline, with the surface partially digested. Sections were made which revealed the typical structure of a gastric polyp. A soft resistance could still be felt at the pylorus, but the peculiar movements described above became less apparent, though they remained more or less so throughout the early convalescence.

The treatment consisted in absolute rest, the application of ice-bags to the epigastrium, calcium chlorid by rectum, morphin hypodermically and fluids by rectum during the first forty-eight hours. Fluids were given by mouth on the third day in small quantities which were gradually increased until about the sixth day, when liberal amounts were taken.

Blood was apparent macroscopically for about ten days in the stools, but gradually disappeared, and within three weeks after admission to the hospital there were no chemical traces of blood to be found.

The patient complained more or less constantly of "gas in the stomach" and considerable distress, though of very little actual pain. The pulse remained around 90, until about the twelfth day, when it began to resume the normal. On the twenty-sixth day he sat up and was taking liberal quantities of soft food. At no time throughout his convalescence was there any evidence of food retention. There was no vomiting, no eructations, and in spite of the liberal quantities that were administered in an effort to build up the system as rapidly as possible, there was no stagnation.

March 31 his weight, which had usually been in the neighborhood of from 165 to 170, was 137½ pounds. Following the primary hemorrhage the hemoglobin was 35 per cent. A month later the hemoglobin ranged from 50 to 60 per cent., the erythrocytes 4,264,000. About this time the tertian type of plasmodium was found when a routine examination of the blood was made, and before treatment could exert sufficient influence, the temperature suddenly went up to 101, the patient had a severe chill, and the hemoglobin dropped to 40 per cent. Under quinin the plasmodia soon disappeared. This was during a month when we have no mosquitoes in St. Louis, and while there was no history of malarial infection, the plasmodia were evidently latent in the bone marrow and had probably been liberated as a result of the rapid activity brought about through the acute hemorrhage. By the early part of June the patient's condition was excellent. The hemoglobin was now 84 per cent., the erythrocyte count 6,488,000, and the blood-findings in general practically normal. The weight was now 158½ pounds, a gain of more than 20 pounds from the first weighing one month after admission to the hospital.

The fluoroscopic and roentgenographic examinations of the stomach revealed an almost total obliteration of the pars pylorica and the median portion of the fundus. The bismuth mass formed a shadow to the left of the vertebral column, showing a very irregular and indefinite outline. The bismuth in trickling through the interstices showed a very dim shadow of the right half of the stomach. The mottling of the bismuth shadow in this portion of the stomach suggested irregular masses in the stomach wall (Fig. 1). The length of time required for the stomach to empty itself was not determined, but there was apparently no retardation, as is evidenced by the bismuth shadow in the small intestines within fifteen minutes after the ingestion of the bismuth.

Though immediate operation following the hemorrhage was considered, the patient seemed such a poor risk and improved so rapidly on rest, diet and iron medication that it was decided to defer it as long as improvement continued. Early in June he felt quite himself again. On the basis of the previous literature and the palpatory findings following the patient's hemorrhage, it was thought probable that there was one large polyp attached near the pylorus and extending through it, and that there were probably a number of smaller ones grouped about the large one. It was hoped, therefore, that a gastrotomy could be done and the polyps removed individually or by a resection of the polyp-bearing area.

*Operation and Result.*—June 17 a median incision was made by Dr. Max W. Myer, a small amount of free fluid escaping. The liver presented itself, somewhat enlarged, but soft. Adhesions were found at the greater curvature about 3 inches from the pylorus, which when detached revealed an area of small, dilated vessels or varicosities on the peritoneal surface. There was some contracture at this point, which presented an hourglass appearance. Palpation of the stomach revealed a large, soft, putty-like tumor mass easily the size of a man's fist, occupying the median portion of the stomach lumen. Further palpation revealed similar smaller masses filling more or less the lumen of the stomach up to the cardia. Only a small portion of the pyloric end seemed free from involvement. Resection seemed out of the question. The stomach was opened over the large tumor mass by an incision parallel to the greater curvature, the pyloric and the cardiac ends of the stomach first being clamped with rubber-covered clamps. When the stomach was opened a reddish-brown papillomatous growth began to deliver itself, and a tumor larger than a man's fist with much the appearance of a bunch of grapes was gradually delivered, the pedicle of which corresponded to the area of contracture noted on the greater curvature before the stomach was opened. The pedicle was half the length of the index-finger. In addition to this, the mucous membrane of the stomach from the cardia to within an inch of the pylorus was literally covered with small pedicled polypi, varying from the size of a large pea to that of a hazelnut. In view of the extensive involvement of the mucous membrane, a complete resection of the stomach was practically impossible. In the meantime, the patient's condition became very unsatisfactory. It was decided, therefore, to remove the large papillomatous growth only. After this was done, an attempt was made to close the incision in the stomach, first overwhipping the mucous membrane with catgut. The stomach was closed with several layers of chromic gut, buttonhole stitch and finally with a layer of silk, stitching the omentum to the suture line.

The patient's condition when he left the table was very bad indeed. Shortly after returning to bed he vomited a considerable amount of blood which included several small polypi. There was constant oozing of blood throughout the day, either from the incision or from the pedicles of the detached polypi, and in spite of every effort the patient died about twelve hours after the operation.

*Necropsy.*—This revealed little of interest outside of the stomach (Fig. 2), which, together with a portion of the duodenum and of the esophagus, was removed, and contained a large quantity of clotted blood. There were enlarged lymph-nodes in the gastrohepatic omentum and the mesentery. Intestinal polypi were not present.

I am greatly indebted to Dr. E. L. Opie for the following notes with the results of his macroscopic and microscopic findings.

*Gross Examination.*—Specimen consists of a portion of the stomach about 17 cm. long and 14 cm. wide. The greater part of the stomach wall is studded with polyp-like growths from 0.5 to 2 cm. in diameter. The mucous membrane between these masses is thrown into deep folds. There is an irregular mass about 12 by 6 cm. in diameter, resembling to some extent a bunch of grapes arising from the mucosa on the lesser curvature (?) about 5 cm. from the pyloric orifice. The nodules forming this mass are similar to those coming directly from the mucous membrane.

*Microscopic Examination.*—A section of a large polyp-like mass 1.5 cm. in diameter shows that it is attached to the underlying stomach wall by a pedicle 0.5 cm. across. The muscular coat of the stomach forms a regular layer below the polyp. The polyp consists of greatly hypertrophied mucous membrane, the muscularis mucosa and a loose connective-tissue core continuous with the submucosa and containing fairly large arteries and veins. The muscularis mucosa can be traced as a thick, doubtless hypertrophied layer at the base of the mucous membrane separating it from the core derived from the submucosa. On section the polyp exhibits three lobules, each of which contains an extension of the core, here consisting of connective tissue and muscularis mucosa. The hypertrophied mucous membrane which forms the main mass of the polyp consists of immensely hypertrophied glands, often with irregularly widely dilated lumina. Near the surface the dilatation and irregularity of the glands is greater than that deeper down. Here the gland consists of unusually high columnar cells with nuclei near the base. A very large portion of the cells have the characters of goblet-cells and are obviously secreting mucus in large quantity into the dilated lumen of the gland. At the base of the mucosa in contact with the connective-tissue core, small glands resembling the pyloric glands of the stomach are abundant. The interstitial tissue between the glands contains cells in great number. These are in part lymphoid cells, in greater part plasma cells; eosinophils occur in immense number throughout the tissue, and polynuclear leukocytes in places are fairly abundant. The connective tissue forming the core of the polyp is the site of acute inflammation. Polynuclear leukocytes occur in large numbers and scattered among them in much smaller number are eosinophil cells.

Section through the stomach wall near the pylorus at a point where the mu membrane is greatly thickened, although there is no

trophy and dilatation of the glands, inflammatory changes in the mucous membrane, hypertrophy of the muscularis mucosa, hemorrhage into the submucosa probably traumatic, and hypertrophy of the mucosa.

At the base of the mucosa are a number of widely dilated glands having the appearance of small cysts. The interstitial tissue of the mucosa contains an immense number of plasma cells, among which eosinophil cells are thickly scattered. Lymphoid and plasma-cells form collections of considerable size, particularly below the surface of the mucous membrane. The submucosa shows a mild inflammatory reaction containing scattered polynuclear leukocytes and eosinophil cells.

A section from the cardiac end of the stomach shows no hypertrophy of the mucous membrane. The glands appear to be displaced in part by accumulations of cells in the interstitial tissue which are most abundant immediately below the surface. Here lymphoid and plasma-cells are collected in immense number. Eosinophil cells are very abundant and form in places conspicuous collections. Parietal cells occur in scant number. Several cysts of small size occur and in some of these polynuclear leukocytes are fairly abundant.

The lesion corresponds with what is described as gastritis polyposa.

There is throughout the stomach both within the substance of the polyp and elsewhere evidence of chronic gastritis in marked degree. The relation of polyp formation to gastritis cannot be defined with certainty. On the one hand, the polyp may be regarded as a hypertrophy of the mucous membrane brought about by irritation associated with inflammation. On the other hand, the polyp may be regarded as a tumor or adenoma formed by proliferation of the glandular tissue. Localized hypertrophy of the mucous membrane will lead to the formation of the pedunculated polyp, the connective-tissue core being mechanically drawn into the nodule.

## CONCLUSIONS

1. Though the diagnosis was made possible in this case through the presence of a small polyp in the wash-water during lavage, which also occurred in Chosrojeff's case, and the presence of a large polyp in the feces following the hemorrhage, it would seem that at least a probable diagnosis might be made in future cases without this conclusive finding.

2. The roentgenographic and fluoroscopic examinations in a case as extensive as this should always be helpful. I have not seen a similar picture in other conditions in my own experience, or in the records presented by others. The mottled appearance of the entire right half of the stomach, as though the bismuth were trickling through and around numerous masses, together with the irregular and indefinite outline of the stomach, could be produced only by such a condition as here described, or a most extensive malignant disease which would readily be differentiated by other means.

3. Achylia gastrica, also observed in Wegele's and Chosrojeff's cases, together with unusual mucus production (Chosrojeff), should always arouse suspicion. Ordinarly in achylia gastrica mucus is not encountered in the wash-water either in the large quantities here described or with the peculiar egg-white character, such as one would expect in the great multiplication of goblet-cells.

4. The repeated presence of fresh blood microscopically in gastric contents removed with care, or in the wash-water, is indicative of a redundant, vulnerable condition of the mucosa in which bits of tissue are readily removed by the tube. I have observed this more often in chronic gastritis than in circumscribed lesions such as ulcer or carcinoma. This should at least lead one to think of the possibility of polyposis. In this case, as in those of Wegele and of Chosrojeff, the clinical picture was that of a chronic catarrhal gastritis, with, perhaps,

fewer symptoms than are ordinarily manifested by gastritis patients.

5. In severe, acute, gastric hemorrhage in a patient with achylia gastrica, abnormal mucous production and normal or increased gastric motility, polyposis is more than probable.

6. Invagination of the pylorus by a polyp could hardly be mistaken for any other condition, after one has experienced the peculiar palpatory findings described in this case.

7. The etiology, of course, is very obscure, but it would seem probable that syphilitic gastritis was here the underlying cause.

Wall Building.

# GROWTH AND EFFICIENCY OF HOSPITALS *

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My excuse for taking up any of your time is that I am appointed chairman of this section, and it seems to be one of the duties of the chairman to open the session with a few remarks. I can assure you that nothing that is of interest to general hospitals is foreign to my sympathy.

This section was formed, as most of you know, last year, and if its work shall prove to be of benefit to the general hospitals, it will grow and have its excuse for existing.

The general hospital is becoming an important factor in most communities, not only of this country, but also of the civilized world. It is almost startling to see what has been accomplished in the multiplication of these hospitals during the last few years.

The first hospitals in this country were the New York Hospital, the Pennsylvania Hospital and the Massachusetts General Hospital. It was nearly two centuries after the first white man landed on the shores of Massachusetts Bay that the first of these was built. The Massachusetts General Hospital was the third. Although the corporation was formed in 1811, the building was not ready to receive its first patient until 1820.

Few municipalities of any size now exist without their city hospitals. If there is not a city hospital, you will find a large private institution within its confines that is devoted to the public interest. I believe that it is not an exaggeration to say that there are twice as many hospitals in existence to-day as there were three years ago. If this is thought to be an exaggeration, you will be convinced to the contrary by talking with some of the firms that make equipment for general hospitals. You will find that all of these firms have been so loaded down with orders for equipment during the last three years that it has been impossible to keep pace with them. This being the condition, it is fortunate that the American Medical Association has formed a section that is devoted to this subject alone.

With this rapid growth, many of the hospitals are undoubtedly in a more or less crude condition, and meetings of this kind tend to perfect, refine and develop those that have been hastily constructed and perhaps carelessly organized into more healthy and common-sense institutions. No hospital can hope to grow in size or reputation unless it has a well-organized staff and keeps the interests of its patients well in the foreground.

Too much cannot be said, and too much emphasis cannot be placed, on treating the applicants for admission to the hospital in the most dignified, gentle and courteous manner. It should be part of the education which the hospital owes to the community to impress all who knock at its doors with its sympathy and kindness toward them and their maladies. I know that it is a hard thing when you cannot accept patients and relieve them, so to conduct yourself toward them that they realize that you regret your inability to be of service to them; but this is one of the vital points to be insisted on at the very outset when any hospital throws open its doors to the public.

The care of the patient may be prompt, may be scientific and may be most effective, but a hospital will grow slowly in reputation if its promptness and efficiency in treatment and diagnosis are not carried forward with an attitude of perfect courtesy toward its patients.

The three things that our hospitals should stand for are (1) the care of the patients, (2) scientific investigation and (3) the education of physicians, nurses, orderlies, every one within its walls, and through them the community at large, concerning the various maladies that are brought within its doors.

I can well remember, when I was a student visiting the outpatient departments in the city of Boston, being impressed with the helplessness of the physician to relieve the various patients that applied. At that time there was not so much thought taken, or so much effort made, to give advice that the patient was able to carry out. A patient who after a careful examination was found to have tuberculosis was given the prescription, emulsion of cod-liver oil and told to spend his winters in the South. The fact that a man was a day-laborer and had a large family dependent on him for support and not a dollar at his command for traveling to the South apparently did not have much effect on the physician. I have seen a patient without a cent in his pocket loaded down with prescriptions which would have cost him two or three dollars to have filled.

When one of these patients applies to-day at our outpatient departments, first, a careful physical examination is made and conditions are noted; then, there is an investigation as to his ability to apply the treatment. Someone visits his home to see if it is possible for the patient to sleep outdoors. If it is not, some society produces him a sleeping-porch. If he cannot pay for the medicines that are needed, the hospital, as a rule, furnishes these medicines free. If he needs a few months in a tuberculosis sanatorium to begin with, this is provided for, and a social worker interests the various charitable organizations to look out for the family during this sojourn. When he is returned to the community, the same careful investigation is followed up. He is gathered into a class of tuberculous patients who meet evenings to get their directions and encouragement from the physician. So that in a short time this family and the neighbors have all become educated in what it is proper to do, not only to help a tuberculous patient to recover, but also to prevent others in the neighborhood from contracting the disease. The sputum is carefully looked after and destroyed, and the whole family is enlightened as to the dangers of carelessness in the conducting of such a case.

This progress has been made largely, if not entirely, through the hands of the general hospital. I have men-

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* Chairman's Address before the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

tioned tuberculosis because that is one of the diseases most frequently heard of; but in the average community other conditions are beginning and I may say are well under way, to be handled in the same enlightened manner.

I have mentioned scientific investigation as second in importance. Some of us feel that the people of Massachusetts may fairly be considered up to the average in intelligence. Yet a private hospital, conducted for the public welfare in one of its university towns, tried to start a small laboratory less than twenty years ago and the president of the hospital objected strongly to having such a department within its walls. This president was not an ignorant physician. I have read many of his papers decidedly to my advantage. He had stood well to the front in Massachusetts as one of the leaders, but he gave it out as his dictum that no money should be spent by that corporation in so useless a department, and that if it was insisted on he would resign.

Another hospital in the same state built its laboratory about sixteen years ago, and the chairman of its board of trustees reiterated to me many times that he had no sympathy with spending money for that purpose; that the money raised for the building of this laboratory would have come to the hospital anyway in the course of time for the actual treatment of the patients and doing good to the poor.

It is difficult for us to place ourselves back even this short period and realize the attitude of educated men toward scientific investigation in our hospitals. To-day these hospitals would be laughed at if they were not making honest effort for efficient work in these departments.

The laboratory in each department in many hospitals to-day is many times as large as the laboratory of the whole institution ten years ago, and it is because of this very scientific advancement in the treatment of a case that it becomes necessary not to lose sight of the gentle and sympathetic care of the patient.

There is no longer any fear of not having the support of the community in scientific investigation, provided the interests of the patient are well guarded and the attitude of the staff toward the patient is carefully looked after. We should try to see ourselves as others see us and then make such changes in our attitude and manner as common sense dictates.

I know of a layman who is a trustee of one of the large general hospitals in Massachusetts, who has become convinced that the place for scientific investigation in all medical and surgical matters is in the hospital and not in the medical school; that funds should be solicited for this purpose, and that the scientific work of the hospital should be as heavily endowed as the department for the treatment of patients. He feels that scientific investigation of medical and surgical matters would progress much faster, and in a much more economical manner, if it were divorced from the schools and entirely engrafted on the hospitals themselves. He believes, and supports his belief with plausible argument, which I believe has not been proved unsound, that the medical school should simply be used to teach what the scientific departments of hospitals have proved to be true.

Many a community has a hospital built for it or has money left to it for building a hospital and goes ahead in a blind sort of way to construct an institution which [illegible] for is larger than it needs [illegible] running it. I recall [illegible]

A hospital without patients cannot educate; it cannot do good. If some of the money is used to construct smaller and more economical buildings, and the part which is left is used for opening and running the institution for a few years so that the community becomes impressed with its convenience and usefulness, this education and demonstration, so far as my experience goes, always brings philanthropists to the front who are glad to keep its doors open and furnish it with plenty of funds for legitimate expenses.

The rapid advance in the construction of hospitals makes certain that in no very distant time public opinion will demand that each community shall have sufficient beds in its hospitals to care for every sick person who needs to be within their walls.

The medical profession is gradually being much more carefully educated and much better fitted for the care of patients, but proportionately fewer persons are seeking this profession. I believe that this foreshadows, accompanies and makes for the advancement of the hospital, because the gathering of the sick into hospitals, not only places them where they can be better treated and given a better chance of recovery, thereby lowering the death-rate of the community, but it also conserves the energy of the physician and multiplies his usefulness. Thus far, the physicians may be quite sufficient to handle our sick in a progressive manner, provided the multiplication of the hospitals keeps pace with the needs of the community.

The German communities are much farther advanced in this particular than the American. Their insurance laws have brought about the support of sick laborers and servants in these very hospitals that are built by the cities. The hospitals in the suburbs of Berlin and other German municipalities may well stand as models for cities of much larger size in this country. Pennsylvania, perhaps, is the only state in our Union that has overdone this work.

Three years ago I recommended to the National Hospital Association that we should take steps to have an inspector appointed for general hospitals throughout this country. I still believe that the appointment of a state inspector, better, a national inspector, would be one of the best steps for progress that we could make. He might not please us, but he would help to standardize our hospitals to do away with many abuses that now exist.

I wish to repeat, the first duty of a hospital is the care of its patients. Everything that we do and all the policies that we adopt should be looked at from this point of view: Will this make for better care of our patients?

The care of a patient can never be first-class unless the attitude of the physicians in charge and of the superintendents toward the patient is both kind and sympathetic.

The hospital problem will not be solved until we have enough beds to care for every patient who can be benefited by coming to a hospital.

The hospital conserves the medical energy of the physician, at the same time rendering that energy more efficient. The time is not far distant when this phase of the matter is going gradually to drive all sickness in a community within the walls of a hospital.

The success or failure of these meetings will finally be tested by our success in bringing to a higher and higher standard the hospitals of this country.

97 Huntington Avenue.

# THE SELECTION OF HOSPITAL EMPLOYEES UNDER CIVIL SERVICE RULES*

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## INTRODUCTION

The underlying principle of the civil service regulations is that the best shall serve the state. The merit system, as it is called, strives to prevent the hospital superintendent from selecting his personal friends for positions in the hospital service and seeks to prevent him also from appointing those who are merely recommended to him by acquaintances. Under the merit system every citizen has a right to file an application whenever a vacancy occurs in a hospital, and the applicant who fulfils in the most satisfactory manner the requirements of the civil service rules is appointed. In this way the state obtains the service not merely of those who may be or may not be efficient, but also of the best available men and women.

## THE COMPETITIVE CLASS

For purposes of administration employees are divided into several classes under the civil service. The most important class is the competitive class. In hospitals this class includes the incumbents of all positions in which substantial salaries are paid. It generally includes all physicians, trained nurses, supervising nurses, chief nurses, trained laboratory assistants, clerks, stenographers and the like. Applicants for positions in the competitive class are required to file a written application for examination. They are then summoned by the civil service commission for a written examination, which usually consists of two parts, one based on technical knowledge and one based on experience. The technical part requires the applicant to submit written answers to technical questions designed to test his possession of the knowledge required for the efficient performance of the duties of the position sought. Physicians are examined in their knowledge of medicine, nurses in their knowledge of nursing and stenographers in their knowledge of stenography and typewriting; their answers are rated on a competitive scale. The experience papers consist of statements prepared by the candidates regarding education and experience. These statements are carefully verified and rated on a competitive scale. Those candidates having the education and past experience best qualifying them, in the opinion of the examiner, for the position sought, receive the highest rating. A properly prepared and properly rated competitive examination in which both technical knowledge and the education and experience of the candidates are rated on a competitive scale undoubtedly results in the selection of the best available men and women for positions for which the hospitals pay a reasonable salary, and for which incumbents are required to have some education and some ability to express themselves in writing.

## THE NON-COMPETITIVE CLASS

The hospitals in this country unfortunately pay many of their employees such small salaries that they are unable to secure men and women who are able and willing to take the examination. Competitive examinations presuppose that there are many applicants for the position. If the hospital must search for the employee it cannot expect the applicant to submit to a competitive examination. In cases of this kind there is no competition between employees for the position, but rather between the hospital and other prospective employers for the employee. In these cases the examination of the applicant is non-competitive. He is examined to determine whether or not he is competent to fulfil the duties of the position rather than to determine whether or not he is the most competent man for the position. Included in this non-competitive class are the domestics, orderlies and other minor employees in the hospital service. The non-competitive examination usually consists of an inquiry into the applicant's personal history, which must in each case be verified. In this connection hospitals seek to give employment with compensation to destitute convalescents, and they also endeavor to bar from their service worthless institutional rounders who fail to perform satisfactory service in any institution. This system of non-competitive examinations is a satisfactory means of preventing hospitals from employing, in minor positions, men and women who are obviously unfit for the positions which they seek.

## THE LABOR CLASS

Positions, the incumbents of which may be efficient, even though illiterate, are in the labor class. This class is divided into two divisions, the subclass of laborers and the subclass of mechanics. Applicants for both subclasses are required to register and are called for examination in accordance with their priority of registration. Applicants in both subclasses are subjected to a physical examination. Mechanics are, in addition, frequently subjected to a qualifying practical test to determine their fitness to perform duties of their trade. It is presumed in the case of laborers that one man in good physical condition is as good a laborer as any other man in good physical condition, and in the case of mechanics that one competent mechanic is as good as another. There is, then, no competition among applicants in the labor class, laborers being subjected only to an examination of their physical condition and mechanics to a practical examination of their competency in their trade. In the hospital service coal-passers, drivers, elevator-operators, ordinary laborers and mechanics constitute the principal employees of this class. This system of selection is reasonably successful in securing for the hospital satisfactory employees of this kind.

## THE EXEMPT CLASS

The exempt class consists of those hospital employees who are not subjected to civil service rules and regulations. This class includes all employees who receive no compensation for their services. Hospital interns and other physicians receiving no compensation are exempt from civil service regulations; but the best hospitals of the country subject all applicants for the position of intern to a rigid written competitive examination of technical knowledge and a careful inspection of personality.

Undergraduate nurses, who receive no compensation, or a nominal compensation, are similarly exempt from civil service regulations. These nurses must possess the preliminary educational qualifications required by statute and are selected by the superintendent of the training-school.

In contagious disease hospitals employees of all kinds are frequently exempt from the civil service rules because of the difficulty of procuring them. The superintendent of the hospital and the superintendent of the training-school are likewise frequently exempt from civil service rule because their administrative duties and responsibilities are so intimately connected with the determination of the administrative policy of the institution that it is deemed best to permit the hospital authorities to select their principal administrative officers without being hampered by civil service rules.

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

### SUGGESTED IMPROVEMENTS

*Personality.*—In the selection of hospital employees by competitive written examination, more attention should be paid to the experience of the candidate, without, however, reducing the severity and thoroughness of the technical examination. Although personality is an important element of the hospital employee's fitness, it cannot properly be made a part of the competitive civil service examination, because the introduction of this element into the examination would tend to introduce an element susceptible of grave abuse. The desired purpose can better be secured by the careful investigation of the experience of each applicant and by derating, and if necessary rejecting, those applicants who have an unsuccessful or an unsatisfactory past record, due in whole or in part to their personality.

*Salaries.*—If the personnel of our hospitals is to be improved better salaries must be paid to the non-professional men and women serving in them. If poor pay is coupled with undesirable service, it is certain that a satisfactory class of employees will not be obtained. The usual reply to this plea for higher salaries is that, since the hospital furnishes maintenance to its non-professional employees, these employees have little opportunity to spend their salaries, and would spend a larger salary, as many of them spend their present smaller salary, principally for purposes which would tend to decrease their efficiency. Although this argument fails to recognize the fact that larger salaries would be likely to attract a better class of men and women, it contains sufficient basis of truth to make us give consideration to the bonus plan, by means of which the employees receive the payment of an appreciable sum of money at the end of their term of service, rather than an increase of salary during their period of service. The payment of a bonus tends to serve as an inducement to permanency of service, and also serves to render less frequent the lapses from a proper mode of life now so frequently attendant on pay-day in public hospitals. The male orderlies are particularly unsatisfactory in this respect. It is believed that, if our hospitals would endeavor to select for the position of orderly men who have been trained by enlistment in the Hospital Corps of the United States Army, they would obtain orderlies who not only possess considerable skill, but who are also men of greater sobriety and readiness and willingness to obey the commands of their superior officers.

*Mechanics.*—In the labor class trade examinations should be more largely introduced as a test of fitness. The complex conditions of modern hospital administration render it more and more unlikely that all men in good physical condition are equally competent and fit to perform the mechanical work of the institution. Simple tests of mechanical skill in the case of almost every employee of the labor class would undoubtedly result in the selection of more competent employees of this class.

*Nurses.*—Under the present system undergraduate nurses are not subjected to civil service examinations at all, because it is presumed that the statutory regulations regarding the educational qualifications and the ability of a competent superintendent of a training-school will accomplish better results than the impersonal machinery of the civil service law. When the superintendent is a thoroughly competent administrative officer this system works reasonably well. As a layman, however, I venture the suggestion that the hospitals are not performing their full duty to the community when they train only the highly skilled nurses who are graduated at the present day. Nurses possessing the preliminary educational qualifications demanded by our statutes and the technical qualifications required of them before graduation from the training-school generally demand a fee for their services which the poor man is unable to pay, and which it is a hardship for the man of the middle class to pay. The hospitals should train two classes of attendants for the care of the sick: trained nurses, possessing all the qualifications possessed by trained nurses of the present day, and trained attendants, who lack some of the preliminary educational qualifications and some of the higher technical skill of the trained nurse. In this way they could furnish attendants who have been trained in a hospital and who could do much to improve the condition of those members of the community who, when sick, are unable to command the services of a trained nurse. During their course of training in the hospital, these attendants will be able to assist the trained nurses; and, after their graduation, they will be able to extend the benefit of trained attendance on the sick to those who are wholly unable, or unable without serious hardship, to employ and pay the regular trained nurse.

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### ABSTRACT OF DISCUSSION

Dr. Moses Collins, Denver: In many hospitals suitable and sufficient accommodations are not made for this middle class of our community, which is the largest class and which is the best class in every particular. These people most frequently say they are paupers or they cannot get accommodations. If hospital treatment is the proper thing, and we all believe that it is, some radical steps ought to be taken to meet the demands of people who require our services and need the hospitals and whose ability to pay ought to be met in accordance with their means. There must be some provision made for nurses and they must be the best. I do not agree that we should turn out half-educated nurses to take care of the best class of people in the community and that we should give the paupers the best we have.

Dr. Joseph B. Howland, Boston: Dr. Fuld mentioned the possibility of the bonus system. That never appealed to me. As an example of how it does not work, we recently had a strike of telephone operators in Boston, involving several thousand operators. The company fought the best they could, but as they had to give in, one of the things they suggested giving the operators was a bonus at the end of the year. I am glad to say that the operators rejected the offer. I think any attempt of employers to hold their employees over a period by offering a reward at the end of that time is wrong. I think the pay should be on the basis of what a man earns as he goes along. We all like to keep employees a year, two years and five years if we can, but I think that the bonus is not going to go far in solving our problem.

Dr. Moses Collins, Denver: I tried that method myself once in trying to hold interns and similar employees by agreeing to pay a lump sum at the end of a certain term of service. It did not prove satisfactory at all, and after talking with them and asking what they preferred, they said that they wanted their money every month and I have had no trouble since.

Dr. John N. E. Brown, Detroit: Those of us who have had to deal with hospital employees know the great difficulty, first of all, of securing the right sort; secondly, of obtaining an efficient amount of work from them, and thirdly, of keeping them in our employment. It appears to me that we would do well if we could induce our boards to agree to have some place or make some provision for those employees when they leave the service of the hospital. I think, too, that provisions should be made for the employment of married people in certain of the departments. That would tend toward steadiness and keep employees in the service. Besides, they should be well paid, well housed and well fed. It would be much better if we could have buildings especially for them in which we would not need to put more than one, or at most two, in a room. If we would seek to pay our employees well, make good provision for them while we have them and, at the end of their term of service, if possible, have a farm or some place where we could send them and maintain them for the rest of their days or give them an annuity it would tend to give the hospitals and the community at large a much better service.

Dr. John A. Hornsby, Chicago: Some years ago the other large hospitals of Chicago complained to my board of directors that I was disorganizing conditions of employment for other hospitals because I was paying from three to five dollars a month more for wages than they were. My excuse was that I wanted the best and I could afford none other than the best and that in order to get them I would have to pay for them. I did that, but I did not seem to get any of the best of it and after a while I concluded that something else was wrong. So about that time we moved our nurses into a new home and concluded to fix up a building for the female help. I have never been able to do anything with employees except to pay them wages, and never have had the same wages in the same hospital for the same class of employment at any time. We have in our hospital now orderlies who are getting twenty-five dollars a month, and men who are doing precisely the same service who are getting fifty dollars a month. They are living in the house and under exactly the same conditions of employment, but in the one case a fifty dollar man has been there for years, knows the technic of the institution, and has proved honest and will do four times the work of the other man and do it four times better. I have never had any trouble satisfying the twenty-five dollar man that it was a fair deal and that he could get his fifty dollars too whenever he earned it. It seems to me that only by that sort of competition can we get hospital help. I have not had good luck with orderlies from the United States Army.

Miss Harriet S. Hartry, Minneapolis: We thought of a plan some four or five years ago of increasing the wage of an employee if he stayed one year; also giving that employee two weeks' vacation under pay. We have a houseman who has been with us two years, and this year we increased his salary five dollars and he remarked that he would never go away. We have a home for female employees outside of the hospital grounds.

Dr. H. B. Howard, Boston: The civil service rule presupposes that there are a great many people who wish the positions; that is, that there is a waiting list. As a matter of fact, if you have civil service examinations when there is not a long waiting list, it will hamper you terribly in filling your positions.

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**A Thought for the Aged.**—A cheering thought as we advance in life is that many illustrious examples show the possibility of conserving the intellectual and moral character to a great age. Isaac D'Israeli said that there has been no old age for *many men of genius*. Titian and Michael Angelo among artists, Voltaire and Littré, Goethe and von Ranke among literary men, Palmerston, Thiers, Beaconsfield and Gladstone among statesmen, Wilks and Paget in the medical profession, testify to this, and there is reason to believe that not only is advanced *age consistent* with mental activity of a high order, but that such mental activity tends to the preservation of the body and makes for happiness as well as for longevity. The advice of Cicero is sound, that "old men of all things should especially be careful not to languish out their days in unprofitable idleness"—Saundby: *Old Age*.

# FACTORS INFLUENCING HOSPITAL COSTS *

THOMAS HOWELL, M.D.
Superintendent, New York Hospital
NEW YORK

The question which I am asked to discuss is this: "Why is it that, while hospitals are slowly but surely establishing certain standards of excellence and are attaching to these standards certain specific uses and pretty well-defined prices as to cost, and in this way are approaching uniformity in the cost of institutional maintenance, there is such a wide difference in the per diem cost as there is at present—one dollar per day in some hospitals and three dollars and more in others."

Before proceeding to discuss this question I think that we should have a clear understanding as to what the average cost per patient per day actually means, as printed in the annual reports of the hospitals. It is not computed after the methods which factories employ in ascertaining the cost of their products. The great difference between factory costs and hospital costs is that hospitals make no charge for investments in buildings and grounds or for depreciation of plant.

As the per capita costs published by hospitals represent merely the operating costs and do not take into consideration investment in grounds, buildings and equipment, or depreciation, it is apparent that, while these figures may be of use for comparative purposes, they do not represent the actual costs. If the omitted items were included it would be shown that the actual daily average cost is from 50 to 75 per cent. greater than the published one. The hospital which has a published cost of $2.60 per day would be found to have an actual cost of $4.50 a day. In other words, the average cost per patient per day as computed by hospitals is in reality only about 60 per cent. of the true cost.

The hospitals which I am asked to discuss, one with an operating cost of one dollar a day and the other of three dollars, represent the two extremes. The one dollar a day hospital represents the so-called city hospitals operated generally in connection with almshouses and restricted by parsimonious city governments to small annual appropriations. It goes without saying that in most of these hospitals the features characteristic of almshouses are likely to prevail. The hospital with the average cost of three dollars a day or more, represents a very restricted class of wealthy hospitals in which the practicing of economy is not so essential as it is with the average run of American hospitals. These two classes of hospitals are in no wise comparable and not being representative they may be omitted from this discussion.

Taking representative hospitals, we shall find that the hospitals operated by cities and also a fairly large percentage of those privately operated have costs per patient per day of from $1.25 to $2.00, while other hospitals, also mostly private ones, will have costs of from $2.00 to $2.75 a day. These are the two typical classes of hospitals. Both are well managed; both are doing good work, and to the superficial observer there is no apparent reason why it should require $2.50 a day to care for a patient in one and only $1.50 a day in the other.

Anyone visiting these institutions will be struck with the similarity of the buildings and equipment. Their furnishings are almost identical. There are the same white iron beds, the same nickel-plated sterilizers, the same instrument cabinets, the same operating-tables, the same wheel stretchers and about the same kitchen, engine and laundry equipment. In other words, hospital equipment is pretty well standardized.

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

The initial cost of equipment is probably somewhat greater in the $2.50 a day hospital, but as equipment does not have to be renewed annually it does not figure appreciably in the operating cost.

What, then, are the factors which do influence the average cost per patient per day? I should enumerate them as follows: location of the institution, amount of scientific work done, number of employees and salaries paid, medical school connection, proportion of private room patients to ward patients, service rendered, including food, attendance, etc.

### LOCATION

In think it will be conceded that the environment of an institution will to a considerable extent determine its expenses. The hospital located in a large city where standards are high will cost more to maintain than one in a small city, just as it costs the average family more to live in the big cities than it costs in the small cities or the country.

Life in great cities is complex. All sorts of complications tend to increase the costs. These affect the hospitals.

The standards maintained by the leading hospitals of a city determine to a large extent the standards of their sister institutions. The former set the pace. The others cannot afford to lag too far behind. The weaker ones must progress if they wish to maintain their reputations, and they must maintain their reputations in order to obtain support.

These things affect the municipal as well as the private hospitals. I think it will be found that municipal hospitals in large cities are likely to have a much higher per capita cost than do municipal hospitals in small cities. In fact, their cost is frequently higher than that of privately operated hospitals in small cities.

The per diem cost in Bellevue and its allied hospitals, Fordham, Harlem and Gouverneur, vary from $1.70 to $2.30 per patient per day.

Hospitals located in the South, other things being equal, should have lower costs than those located in the North. Ordinarily food and labor are cheaper in their locality and their expenditures for coal are much less. It costs the Winnipeg General Hospital, for example, over twenty-eight cents per patient per day for coal while the Charity Hospital of New Orleans spends less than three cents per patient per day for this item.

### EMPLOYEES AND SALARIES

I think it will be found that the pay-rolls of hospitals are the most influential factor in determining the average cost per patient per day. The hospital with a small average cost will be found to be operating with few employees and perhaps paying them small wages. The hospital with the high per capita cost will be found to have a larger number of employees and to pay better wages.

In the institution with the low per capita cost the proportion of employees to patients is about two employees to three patients, whereas, in the institution with the large cost the proportion will be about three employees to two patients.

I know of institutions with 250 beds with pay-rolls of from $3,500 to $4,000 a month, and I know of other institutions with the same bed capacity with pay-rolls of from $10,000 to $12,000 per month. In other words, one class of hospital pays out in salaries and wages about fifty cents per patient per day, and the other about $1.20 per patient per day. These are representative well-managed American institutions.

I know of other institutions in which the cost per patient per day for salaries and wages is twenty-eight cents, which is too low, and of others in which it is $1.50, which is too high.

Municipal hospitals outside of the large cities are quite likely to have small pay-rolls. One reason for this is that the annual appropriation by the city government is kept down to the smallest possible amount. Another reason is that certain city officials and their clerks do, without cost to the hospital, work that private hospitals must pay for. For instance, the city treasurer handles the hospital's money, the city auditor audits its accounts and does part of its bookkeeping, the city collector collects its bills and the police department operates its ambulance system.

The hospital with a cost of $1.20 per patient per day for salaries and wages will give to its patients better service than does the hospital with a cost per patient per day of only forty-five or fifty cents. It will employ more nurses and more orderlies and its housekeeping will be better done. It will employ a competent chef and serve better food. It will maintain first-class pathologic, hydrotherapeutic, social service, Roentgen-ray and ambulance departments. It will furnish first-class telephone, front door, clerical and elevator service day and night. It will employ skilled mechanics and its up-keep will be so excellent that depreciation of the plant will not be appreciable.

It is generally recognized that the structural conditions of a hospital plant are a big factor in determining operating expense. A modern hospital built with reference to convenience and economy of operation will be much less expensive to maintain than one occupying old, poorly planned buildings.

Many hospitals have been built piecemeal. The result is a hodge podge, inconvenient to administer and requiring an excessive number of employees.

### SCIENTIFIC WORK

Hospitals which do high-class scientific and educational work are bound to have higher costs than those institutions which do only routine clinical work. They will have a large paid staff doing laboratory and research work. A large intern staff will be necessary, and probably a number of paid, resident-staff men will be employed. All of these men will be furnished with board and lodging, and the salaries paid the men in the pathologic, bacteriologic, chemical and Roentgen-ray laboratories, and those paid the salaried resident staff doing clinical work will amount to a considerable sum. The outlay for laboratory supplies and instruments of precision will influence somewhat the per capita cost.

Hospitals having a reputation for doing high-class scientific work are likely to enjoy the confidence of the public to such an extent that they will have, from a medical point of view, a more important class of cases. The urgent demand on the part of patients for beds in these institutions will result in convalescent patients being discharged early to make room for the more critically ill. The beds will be kept filled with acute cases. Patients suffering with serious or obscure diseases cost more to care for than patients suffering with minor disorders. They require much more care and attention from doctors and nurses.

In the other class of hospitals in which the demand for beds is not so great many of the patients are afflicted with diseases of a more or less chronic nature, are allowed to remain in the institution for long periods, and, in a sense, are little more than boarders and make small demands on the nursing and medical staffs. Patients of this class require much less in many other ways than do acute cases. For instance, they require little laundry work as compared with acute cases. Hospitals catering to this class will get along with about one-half as many laundry employees, and the linen not being washed so often lasts much longer. Neither do these patients require such varied and expensive diets as do those acutely ill. Numerous other items of expense are similarly influenced.

### AFFILIATION OF HOSPITALS WITH MEDICAL SCHOOLS

The hospital which is connected with a medical school usually does more for its patients than does the hospital without such connections, and this results in increased cost. I have no statistics of American hospitals covering this point, but the average cost per bed occupied throughout the year in the London hospitals connected with medical schools is about $600, and in those without medical schools $550.

### PRIVATE ROOM SERVICE

The larger the proportion of private room to ward patients the larger will be the average cost per patient, as the cost of caring for a private room patient is usually double the cost of caring for a ward patient. This is one reason why municipal hospitals generally have a lower per capita cost as, ordinarily, they have no accomodations for private patients.

A number of hospitals provide paid resident staffs for their private service, thus materially increasing their pay-rolls.

There is a general belief that large institutions should have lower per capita costs than small ones. As a matter of fact, it does not work out this way in practice. The big institutions are generally conducted on broader lines than are the small ones; they have more varied activities. While they buy in larger quantities and are thus enabled to obtain somewhat better prices, it is much more difficult for them to enforce economies and to prevent waste. In the small institutions the superintendent is able personally to supervise most of the details and to enforce frugality in the use of hospital supplies. In the large institutions responsibility is divided. And as economy in purchasing supplies does not influence the per capita cost nearly so much as economy in using supplies the smaller hospitals usually have lower costs.

Some hospital officials assert that their physicians are extravagant and attempt to explain their high per capita costs in this way. This accusation ordinarily is unjust and not borne out by the facts. A study of the expenditures of a number of hospitals with a per capita cost of about $1.50 a day showed an average cost per patient per day for medical and surgical supplies of fifteen cents, while an equal number of hospitals with a per capita cost of $2.50 a day showed an average cost of nineteen cents per patient per day for these items. In other words, the hospitals with the higher per capita costs spent only four cents more per patient per day for medical and surgical supplies, leaving ninety-six cents of their excess cost to be otherwise accounted for.

The question has been raised as to whether or not it is practicable to standardize hospital costs. It seems to me that any attempt to do so must meet with failure. I can understand how the costs of individual institutions can be standardized, but I cannot understand how it is possible to apply cost standardization to hospitals as a body in view of the fact that the work done by them and the conditions surrounding them vary so greatly. It would be just as reasonable to attempt to standardize the costs of two watch factories, one of which is producing a fifty dollar watch, and the other a one dollar watch.

The wise hospital superintendent will try to obtain a reasonable per capita cost for his particular institution, not so high that it will invite charges of mismanagement and extravagance nor yet so low that it suggests parsimony and inadequate care of patients.

He will not attempt to make the expenditures of his hospital conform closely in all details with those of some other hospital, or group of hospitals, as he will recognize that each institution, owing to its peculiar conditions and the character of the demands made on it, is more or less a law unto itself.

12 West Sixteenth Street.

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### ABSTRACT OF DISCUSSION

**Dr. Cleveland H. Shutt**, St. Louis: In comparing our public hospitals with those of Europe, I think that the situation has been satisfactorily explained by the statement that the differences are due entirely to the governmental differences of the country. European institutions are controlled by more or less permanent influences; our institutions are subject to fluctuating influences; consequently, we cannot establish standards and feel that they will be maintained indefinitely.

The question of how we are to establish satisfactory permanent systems for municipal institutions ought to be solved by this and other allied societies interested in hospital work. We know of a number of cities which have expended immense sums of money, in some cases millions, for institutions, and the results have not been, to say the least, a source of pride. We know of cities that have spent moderate sums of money and have enjoyed good management for a period of a few years and then they begin to have unsatisfactory results. In only one or two of our American cities has a city institution of great size given continuously satisfactory service. I think that the Boston City Hospital can be cited in particular. This is a situation which ought to be corrected. I do not pretend to have a solution of the problem, but I have thought of a number of points on which I should like to offer suggestions.

The only way that we can obtain permanency of system for our American institutions is by establishing a medical service in them which will be so satisfactory to the people and profession that they will not permit a retrogression.

The essayist outlined a splendid and proper line of executive control, namely, a board of directors or trustees who shall have complete and full control of the institution in every particular—in the selection of superintendents, erection of buildings, purchase of supplies and appointing of all classes of employees, including the medical staff.

After a body of this kind is organized they should first give the best treatment to the patients who come to the institution. How can this be done? I believe it has been worked out with eminent satisfaction in a number of European hospitals, especially in Vienna, Berlin and London. In England the college hospital has proved eminently satisfactory. In Europe the best medical men in the community have charge of sections of public institutions of which they have full charge and for which they are responsible. The chief practically has control of the appointment of his associates and they form a complete and independent organization for each department. There is opportunity for continuous development of good men for the institution and this gives the public the proper confidence in the institution

Some of the best men in every community are willing and anxious to engage in public hospital service, provided they can be assured of permanency of position and freedom of opportunity for scientific advancement.

Every city, of course, has its local conditions. A city which has only one medical college can work out its public hospital organization without much trouble. There may be difficulty in installing the hospital-college plan, because certain medical men may have positions of medical influence and may hesitate, in the beginning, to accept an inferior position, but this is, I think, for the medical profession to consider seriously. I believe that we hospital men should decide what we would like to do, then go before the medical profession stating that we desire their assistance in establishing something which is going to be permanent for them, for us and for the community, stating that it is going to require some sacrifice on their part in the beginning. I believe that medical men will sacrifice willingly, because I have seen a demonstration recently in my own city, in the reorganization of one of the universities there in which the entire faculty resigned. The majority of them could have held their positions without any question, but they simply resigned for the good of the cause. They said to the board of directors, "You gentlemen appoint a new faculty with the idea of securing as good men for the school as the facilities and accommodations will attract."

MR. W. B. STRATTON, Detroit: Just a suggestion on the matter of plumbing in connection with the hospital. I find that the plumbing boards of this country have developed thoroughly along certain lines, but have not as yet taken up the plumbing of hospitals except to put out catalogs and mark "hospital plumbing" on them. "Hospital plumbing" is their ordinary every-day office-building and hotel plumbing picked out as though it would do for a hospital. I would suggest to the surgeons that they try to think out what they consider ideal in the way of fixtures. They will find the plumbing trade ready to meet them.

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# THE PSYCHOPATHIC HOSPITAL IDEA *

E. E. SOUTHARD, M.D.

BOSTON

Naturally we are still much occupied with preaching the gospel of psychopathic hospitals in America, since, after all, the realization of our long-cherished ideals is extremely recent (Psychopathic Ward of University of Michigan Hospital, 1906; Psychopathic Department of Boston State Hospital, 1912; Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, 1913). Nor is the foundation work, which led to the establishment of these three somewhat similar but in many ways contrasted institutions, a matter of very ancient history.

To be sure, Griesinger's idea was early implanted in some American minds. My colleague, Dr. D. H. Fuller, has called my attention to Dr. Pliny Earle's utterance[1] of 1867.

> Carbon agglomerated is charcoal. Carbon crystallized is diamond. What charcoal is to the diamond, such I believe, is the psychopathic hospital of the present compared with the psychopathic hospital of the future. . . . When the defects which I have mentioned shall have been thoroughly remedied by a comprehensive curriculum, a complete organization, a perfect systematization, an efficient administration, the charcoal now just ready to begin the process of crystallization will have become the diamond and the world will possess the psychopathic hospital of the future.

The movement which interests us is more modern. I think especially of Mosher's Pavilion F; of the New York Lunacy Commission's Pathological (later Psychiatric) Institute; of the institution of modern clinical laboratories at Danvers and Worcester, Mass., and at the Government Hospital for the Insane, Washington, D. C. Earlier still we must remember Cowles' work of introducing the seminary idea into insane hospitals and of encouraging science of several sorts in their laboratories, of the early Germanizing and later individual stimulation of American psychiatry by Adolf Meyer, of the extraordinary address of S. Weir Mitchell[2] at a meeting not so long ago of the American Medico-Psychological Association which awoke echoes all about. Back of all this the university and modern scientific movement have contributed in ways impossible here to trace.

I embraced the opportunity to speak before the new Section on Hospitals of the American Medical Association because I knew that many, if not most, of its members would be practical men in charge as a rule of general hospitals. From my general hospital experience I know how important are the proper arrangements for the insane in general hospitals, and I wish to urge unconditionally that their superintendents look to it either to give their insane patients proper accommodations within general hospitals or to spend time and energy getting their local communities to establish proper psychopathic hospitals.

Some of the best general hospital superintendents I have ever known have blinked this problem. Most of you are quite cognizant that excited and delirious patients are not getting proper treatment in general hospitals. The excuse for drugging and tying down the excited and delirious in general hospitals is that other patients are prevented from suffering thereby! The justification for chemical and mechanical restraint is therefore the greatest good to the greatest number.

The reply is simple. There is no excuse for not treating the excited and delirious in general hospitals by the methods long since elaborated in hospitals for the insane. These methods—hydrotherapy, special attendance, isolating-rooms and common sense—can all be supplied in general hospitals except hydrotherapy and isolating-rooms. I have no doubt that all will agree that this proper technic of therapy is not applied in more than a handful of general hospitals, if in so many as a handful, in America.

This topic is so much in my mind that I must be given leave to introduce my notion of the varied functions of the psychopathic hospital herewith. I would call especial attention to forthcoming work by Dr. Donald Gregg, who will give a statistical foundation for my statements, discussing the mortality of delirium tremens in general and insane hospitals, in a communication to be presented at the first annual conference of the Psychopathic Hospital in Boston. I beg leave here to quote Gregg's conclusions:

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

* Being Contributions of the Psychopathic Hospital, Boston, Mass., No. 1913.26. Bibliographical Note—The previous Psychopathic Hospital Contribution entitled, "A Study of Human Behavior" by Prof. M. Yerkes, will appear shortly in the Boston Medical and Surgical Journal.

[1] Earle, Pliny: The Psychopathic Hospital of the Future, address at laying of the corner stone of the General Hospital for the Insane of the State of Connecticut, June 20, 1867, Utica, N. Y., 1867.

[2] Mitchell, S. Weir: Address before the Fiftieth Annual Meeting of the American Medico-Psychological Association, Philadelphia, 1894; Proc. Am. Med.-Psychol. Assn., 1895, 1.

1. The results of the eliminative treatment of the deliriums with relative freedom and hydrotherapy, and a minimum amount of medication, far excels in effectiveness the usual treatment by restraint and depressant drugs in cases of the symptomatic psychoses, including alcoholism.

2. Every general hospital should be provided with the facilities for treating properly cases of delirium. Such facilities should include isolation wards where quiet is not essential, and continuous bath apparatus for hydrotherapy.

3. The present situation in Boston, where no general or insane hospital is ready to take and adequately care for cases of simple delirium tremens, is one that should be promptly remedied by the establishment of a public hospital properly equipped for the treatment of inebriety.

But, you will ask, how is the problem of delirium tremens the special task of a psychopathic hospital? Surely it is not the major task thereof. Yet I conceive that it will be an important task of every reception hospital constructed on modern lines to indicate by its mortality tables for alcoholics and by ocular demonstrations of its hydrotherapeutic and non-pharmacotherapeutic methods what similar reception units should be accomplishing in general hospitals.

In this connection I shall quote a brief paragraph from my annual report as director of the Psychopathic Hospital in Boston. Although perhaps the modern psychopathic hospital should not have alcoholism as its major task, yet as to the Boston institution:

> It is to be observed that many cases (thirty) which have eventually to be classified as delirium tremens do in some way get admitted to the Psychopathic Hospital. A still larger number of cases (fifty-four) of the allied disease, alcoholic hallucinosis, are admitted under the temporary care law. The latter, or hallucinosis group, is not specifically excluded by law (as is the delirium tremens group) from admission. It is probably true that the Psychopathic Hospital is somewhat better able to take care of both of these groups of cases than any other local institution, but it is also true that these cases are taken care of at the expense of the non-alcoholic insane, occupying the beds of persons falling more strictly under the authority of the State Board of Insanity. Common humanity and mistaken diagnoses account for most of our admissions of delirium tremens cases. It would seem that a Boston branch of the state hospital for dipsomaniacs should be strongly considered by the proper authorities, and that not only the delirium tremens cases, but many other somewhat curable cases of alcoholic psychosis might well be classified at such a branch.

It is well known that the whole question whether there should or should not be special hospitals for dipsomaniacs cannot be regarded as settled, for the whole country at all events. It will remain the task of numerous, nay the great majority of, general hospitals, to take charge of the acute alcoholics of the community. To do this adequately, the majority of such hospitals will need extensions and new hydrotherapeutic arrangements.

I have plunged *in medias res* by stating to you the mission of the Boston Psychopathic Hospital, which should occupy us for some years, namely that of demonstrating some pretty well-known truths concerning the treatment of delirium, whether delirium tremens or other forms. There is, however, a possibility of novelty for us in this field, as some forthcoming work by H. M. Adler, Chief of Staff of the Psychopathic Hospital, will show. He has secured a quantitative record in the red blood-cell count of the effects in reducing the count in certain cyanotic patients by means of prolonged baths. In certain instances he has been able to predict the probability of an excitement in a patient by the observation of oncoming cyanosis.

What are the major problems of a psychopathic hospital? I have perhaps indicated to you that I feel that they are largely, or at all events extensively, somatic in character, yet a review of the communications to be read on the occasion of the first annual conference of the Psychopathic Hospital in Boston, to be held June 24, 1913, will demonstrate that these problems are much wider in scope than those with which I have before dealt too much *in extenso*.

In the first place, let me insist that far too little stress has been laid in this country on sociologic and psychologic matters in their relation to medicine. In a recent analysis of papers produced by officers in the state institutions for the insane in Massachuetts, I found 43 papers dealing with structural changes in the nervous system, 15 papers dealing with somatic non-nervous changes, 12 dealing with general considerations, 11 dealing with strictly clinical considerations and 7 dealing with psychologic matters. It is clear that such a distribution of interests is by no means a natural one. I found that a fair distribution of interests in our first annual conference divided the medical and social results of our first year's work into about equal parts, from which I conclude that the outpatient and social service relations of a psychopathic hospital must be among its most important functions.

I shall dismiss the remainder of my discussion in brief paragraphs, although I know that each of the main topics would require a discussion somewhat similar to that which I have given of our mission with respect to delirium.

We have at least as important a mission with respect to syphilis. When the patients admitted to a state institution for the insane show positive Wassermann reactions in 22 per cent. (H. L. Paine's data, Danvers State Hospital), or, as at times for certain months at the Psychopathic Hospital, from 25 to 30 per cent., it is high time that social workers and economists as well as physicians should begin to take an interest in that field of mental hygiene which shall seek cooperation with the sex hygiene propagandists. Two features of the syphilis situation have struck me during the last year. In the first place, Dr. W. P. Lucas has shown the great importance of syphilis in the children and adolescents coming to the Psychopathic Hospital outpatient department. The percentages are by no means final, but arrest attention. The relation of syphilis to specialized defect of the mind, coupled with defect in auditory imagery, has also received attention in our examining-rooms. It has been possible to advocate special educative measures in certain cases with specialized auditory defect in imagery. Auditory defect in imagery has been shown to be much more common than visual defect in imagery. Certain backward children, as a result of Dr. Anderson's work, can be given specific visual instruction to replace the auditory type used in many schools. The problem of certain "terrors" in school may thus be partially met.

In the second place, the novel suggestions of Dr. Homer Swift of the Rockefeller Institute give opportunity to optimistic therapeutics in the field of general paresis and other forms of cerebrospinal syphilis.

Here is a field in which a psychopathic hospital can work far better than the state institution of older style, since many hands, medical, nursing and technical, are at hand in a psychopathic hospital equipped for the pursuit of general medicine.

With these inadequate words I leave the topic of syphilis in a psychopathic hospital; but of course, syphilis is a problem which is in many ways transmedical and will require the cooperation of social workers and economists to the last degree if we are ever to "scotch the snake."

I have studied the social service movement with a great deal of interest and have made many friends among the social workers. There is a new but growing sense of the value of social work, and the accompanying sense of pride on the part of the social workers themselves is much in evidence. For this I do not blame the social workers, but we must all fear that the well-known spiritual pride of physicians meeting this now as yet uncertainly founded pride of the social workers will forbid the best cooperation for some time to come. Perhaps this is particularly true in mental medicine; for alienists have long been social workers in their fashion. They have been more truly economists and social workers than the general practitioners or specialized physicians of our general hospitals, and have been approached only in their economic and social sense by the superintendents of general hospitals. As you know, however, the latter have been recruited in many significant instances from among superintendents of hospitals for the insane, so that the group represented by the Section on Hospitals before which I am now speaking is a group in which the existent sense of social service is perhaps largely derived from long-standing medical contact with psychopaths. The new movement requires cooperation and coordination between physicians and the new lay forms of social service. Progress should be made in every community to determine the dimensions of the social problem as it affects the psychopath. In many states the minor wards, the adult poor and other largely non-psychopathic dependents have been pretty adequately cared for by systems employing lay visitors, investigators and other agents of centralized boards. Social service for psychopaths, except those who are met in the various classes just mentioned, is as yet non-existent in any systematic and well-rounded form. Estimates will be shortly available concerning the dimensions of this problem also. For example, the Psychopathic Hospital Outpatient and House Service in Boston has been shown to demand very probably about eight social workers, and the problem of the rest of the state, should it remain at the present level, could perhaps be covered by seven more. Experience, however, shows that preliminary estimates are, as a rule, too low for this form of work. The leaders in social service do not yet understand adequately the difficulties in social service for psychopaths, having had their minds riveted on problems of investigation, financial and social relief not systematically involving the somewhat less predictable proceedings of the psychopath.

So much for the suggestion of problems being attacked in the modern psychopathic hospital. I have brought into stronger relief the problems of delirium, of syphilis and of social service than others. Nor have I mentioned the more intimate, complex and difficult problems of pathogenesis and etiology in mental disease which the workers attracted to a proper psychopathic hospital will engage in. I had not thought it worth while to present such matters to the section before which I report, and refer my hearers to special contributions elsewhere. Let us hope that American enterprise and imitativeness will far more speedily bring about the dotting of this country with new hospitals, each an advance on its predecessor and, in conformity with the American spirit of autonomy, no one exactly like another. Some say there should be a psychopathic hospital in every city of fifty thousand inhabitants; others say in every city of a hundred thousand inhabitants. Such claims refer, of course, rather to receiving hospitals with an immediate diagnostic and therapeutic aim than to more elaborate institutions of the Ann Arbor, Boston and Baltimore types. The necessity of smaller psychopathic hospitals would be largely removed, should the general hospitals of the cities in question think it worth while to face the problem of the acutely insane of their districts.

Whose fault is the present reign of ignorance as to the proper treatment of the acutely insane? The practitioners in neurology say that they have warned general hospital superintendents concerning their duties with respect to installation of baths, special attendants and isolating-rooms for the delirious. The surgeons and physicians say that these matters are largely in the hands of interns under the present system; and some say that proper residents of longer experience will meet the problem. I am not sure that we can absolve the neurologists and even more the hospital internists from responsibility for the poor treatment which the insane receive in general hospitals. I am certain that an organization like this Section will do much good, for its members can push on the financial side of the problem by providing ways and means for the installation of proper nursing and other external arrangements. To-day is certainly an era of busy interest in sociology. The psychopathic hospital in a community is bound to be one of the most concrete sources of enlightenment as to psychopaths, and every society for mental hygiene, for sex hygiene, for the amelioration of alcoholism, for eugenics, should make it part of its business to help start a psychopathic hospital with its outpatient service in every community in which there is any hope of awakening social sense.

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## ABSTRACT OF DISCUSSION

**Dr. John A. Hornsby**, Chicago: A week or two ago I was called to account because of a page in my work on hospitals concerning the restraint of patients. I am wondering whether Dr. Southard has run across the same class of cases as we have and what he would do with them. For instance, a patient who has been operated on develops surgical delirium tremens. He begins to yell and fights if you undertake to prevent his yelling. He fights against every sort of restraint. If you let him go to the limits of the room and his surgical injury is such that he can be allowed to go there without danger, then he fights to get outside. What would Dr. Southard do with a patient of that sort?

**Dr. E. E. Southard**, Boston: We cannot treat these cases in the ward of the general hospital as it exists at present. The method of treatment which you have carried on in the general hospital as at present constituted seems to have something to do with other patients in the vicinity. Now we should not be averse to treating a patient after a certain fashion because there are other patients in the vicinity. We should have proper conditions. We should have isolation rooms. We should have wards with safety deposit vault ventilation principles in which noise could be eliminated. I do admit that is really a problem. The general hospital superintendent will have to contrive to have some money spent on modern devices for prevention of noise, prevention of the transmission of noise, so that it will not disturb the neighborhood.

In the next place, if it is an opened peritoneum that the patient might take the sutures from, the restraint is obviously necessary. I suppose no one would deny the importance of keeping the patient's hands out of his peritoneum. However, many of these cases are under a certain amount of depressant treatment anyhow, without resorting to a drug. I take it that that question is hardly a problem of great moment.

But if you have some properly ventilated noise-proof ward in your plant, equipped with modern hydrotherapeutic appliances, you will, I think, reduce a good deal of the violence which characterizes many of the general hospital wards in which I have worked.

According to Kraepelin a delirious or excited patient should not be strapped to the bed. If he does not stay in bed he should be placed in a warm bath of blood heat, and if he will not stay in this bath with gentle persuasion he should be put into a moist, warm pack for a limited period. He is given to understand, if he can understand what is going on, that it is to be for a limited period, an hour or two; he should then be removed and placed in bed. If he will not stay in bed he should be placed once more in the warm bath, and if he will not stay there, once more in the pack. This cycle of bed, bath, pack is repeated ad libitum through the night, if you have the nurses. You can seldom find a superintendent who will give you nurses for this purpose, because they are not to be had. Still this is indicated by the therapy of the patient, and why not do the best for the patient, if you are going to permit him to recover? There is hardly a case of the non-surgical sort in which there is not positive danger of infection of the wound that will fail to be benefited by this simple hydrotherapeutic procedure which Kraepelin has advocated and which has some thirty years of history back of it.

So I say a new type of ward and new hydrotherapeutic measures will meet most of the problems of the delirious patient met in the general hospital. There might be a few, as Dr. Hornsby mentioned, whom we might have to put in the insane hospital.

How many patients of this kind do you think that there are in a year in your hospital, Dr. Hornsby?

Dr. Hornsby: In a hospital of 350 beds, of which I have been in charge, I should say three a week. The percentage of surgery is large. We do in that hospital from twelve to fourteen major surgical operations a day.

Dr. Southard: Well, then it would not cost an extraordinary amount of money to put up a plant like that in the Belfast and London institutions and put in hydrotherapy and treat these cases in that way.

Dr. John A. Hornsby, Chicago: It is not the cost of such an institution in that case, I take it. The cost is in transportation of the patient, especially from the general ward or from the quiet room, to such an institution and the cost to the other patients in such a case.

Dr. Arthur B. Ancker, St. Paul, Minn.: It seems to me that it is not so much a question of the noise, and the consequent disturbance of the other patients, as it is a question of preventing the patient from doing great injury to himself. Not an insignificant proportion of the surgical patients who have developed delirium tremens have wounds that make it important that they should be, as it were, immobilized; in some cases we are told that they must not be allowed to sit up in bed, that there must be no exertion whatever; so even supposing that we had the hydrotherapeutic equipment, in many cases the patients would necessarily be deprived of this treatment because we would be unable to take them from their beds. We, at the hospital, have had many opportunities to consider all these conditions, and, while I believe that the treatment which is most in vogue in general hospitals is not altogether humane or desirable, yet I have seen two or three hundred cases in thirty years and I have rarely seen one in which we did not have to do something in restraint of violence, and I cannot quite understand how, under the circumstances, one could well avoid the use of restraints or the use of drugs or the use of both of them. The police ambulance brings us many victims of long debauches suffering from delirium tremens, probably a couple of hundred a year, and I quite agree with you that the hot pack, hydrotherapy and a sufficient number of nurses are essential for the proper care and treatment of that class of cases, but it is not to that class that I am particularly referring; we have to deal with a condition that complicates not an inconsiderable number of the surgical cases that appears a good deal like delirium tremens; these are the cases that we have to keep in bed, that we cannot put in hot packs, and that we cannot take to the hydrotherapeutic room, even supposing we have one; the kind of a case that leaves us nothing else to do but to use restraint or give some kind of a drug to put the patient to sleep temporarily.

Dr. E. E. Southard: I should like to say a word as to restraint, with respect to the bath-tubs. Really it is not a restraint and those little knobs that one of the plumbing companies puts on the tubs which permit you to tie the patient in ought to be left off.

Dr. Rupert Norton, Baltimore: Suppose you have them in a pack?

Dr. Southard: The pack is a restraint up to a point. The patient, however, as I say, is told at certain times what it is for and, if he understands that, so much the better. If he cannot understand what is going on it goes to restrain him.

There is no psychologic objection to restraining an unconscious person, I think. There is an objection on the part of psychology in this instance because the patients understand, but there would be really no objection, I take it, to restraining an unconscious patient. Of course persuasion is, in a sense, a sort of restraint; you exert a mental effect on the patient. The discussions of Dr. Hornsby and Dr. Norton have led to a description of a small number of delirium cases, whereas what I was talking about was the large group of delirium tremens cases. In almost eight hundred necropsies at the Boston City Hospital about 8 per cent. proved to be really mental cases, chiefly cases of delirium tremens. Now I am quite convinced from the result of these necropsies that a good many of the patients might not have died if proper treatment had been employed. Of course one might say, "What do we want to treat them for? Why not let them die?" That is, however, not humane.

Dr. Cleveland H. Shutt, St. Louis: I believe that most delirium tremens patients can be treated by hydrotherapy, but we know that there are certain cases in which this treatment is impossible. A patient has been shot in the abdomen and it is necessary to place drains in the abdomen in several places. We can use hydrotherapy to a certain degree, if we are enthusiastic in that direction, but we can accomplish most for the patient by using restraint and drugs. Traumatic injuries, complicated by delirium tremens, will also require judicious treatment without frequent transferring from bed to tub, or even placing in water, and risking danger of infection.

Dr. H. B. Howard, Boston: I am convinced that there is more or less ill-advised restraint in our general hospitals. I think that it comes about in this way: A delirium case develops in the night and there is nobody but the house physician and the superintendent there, and if the rules of the hospital are not such that the superintendent has to be called in to each one of these cases, there is no doubt that there is ill-advised restraint applied, because it is applied by the young man who has never had any training in an insane hospital and it is applied in a crude manner.

Dr. George F. Jelly used to say that before you tried restraint you ought to see what light and society will do for your patient. Now we would add to light and society continuous bath.

Dr. E. E. Southard, Boston: I wish that the state board would request the superintendents of general hospitals to obtain a record.

Dr. Howard: If they had any authority over them doubtless they would. I admit that there is a good deal of ill-advised and poor restraint. Perhaps restraint is necessary in a few cases and it can be so applied as to be of little damage.

# HOSPITAL AND ASYLUM WORKSHOPS

## SOME POSSIBILITIES OF HANDICAPPED LABOR *

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It is so hard for well people to make a living that the casual thinker will not believe it possible for sick men to work effectively and without harm. When the invalid is poor we perform but the natural part of charity if we give him medical treatment and save him from the necessity of work. Yet experience has shown that in many chronic illnesses effective and remunerative work may be accomplished with physical and moral benefit to the workers.

The object of this paper is to suggest the possibility of workshops for the chronic invalids who haunt the outpatient departments of the great hospitals and who have collectively a great deal of efficiency and skill, though they cannot find places in the usual fields of labor.

We do not have to search long for suggestive examples of work among handicapped people. The blind have thriving industries, the cripple schools have for a long time been engaged in teaching their pupils trades adapted to severe limitations. One of the most refreshing activities of modern institutional life is to be found in the schools for feeble-minded such as that at Waverly, Mass., where, under Dr. Fernald, there is an effective system manned almost wholly by patients who in the old days would have been idle. In the insane hospitals all over the world the patients are more and more generally given work to do in connection with the farms and households, and lately in workshops like that of Dr. Tuttle at the McLean Hospital in Waverley and at the Hans Schönow under Dr. Laehr in Berlin. Besides all this activity in charitable or semicharitable institutions, there has of late years been a remarkably effective use of modified work as a remedy in the sanatoriums for the treatment of nervous exhaustion among people of means who have overworked and overworried or who are suffering from the effects of too much idleness. These industrial experiments have all been so hopeful in their results, so beneficial to the workers and so surprisingly productive that it seems almost certain that important developments may be expected from outpatient industries.

My own experience has been in sanatorium work with nervously exhausted patients. I have found that among persons of education and taste the ancient handicrafts offer a most interesting and profitable means of regaining strength. I believe that some modification of this crafts-work system will be easily available for hospital shops. With a basis of this kind we should be able to show the therapeutic possibilties of work in a large range of cases. The economic possibilities for hospital patients remain to be proved, but they are decidedly interesting.

Crafts work is a vague term and may be easily misunderstood. It means, generally speaking, work by hand instead of by machine, and it includes almost any useful and ornamental product, from a rug to a coal scuttle. The important difference is that the crafts work at its best is confined to products that can be made better by hand. The world is beginning to appreciate that a great many articles of daily use are best produced in this slow way. It is true that the finest work of the craftsman, the goldsmithery and silversmithery, the wonderful dyes and weaves that make inimitable fabrics, can be done only by highly trained workers. But there is an enormous mass of routine and preparatory work in the crafts, and this work can be done perfectly well by handicapped persons if they are carefully directed and controlled.

Men are thrown out of employment for very trivial reasons—it does not follow that they are good for nothing because they fail to fit the particular job they happened to find available. The new system will gather up these sick and discarded workers and adapt them to work which will be graded and controlled to meet any degree of handicap. There will be some agreeable surprises for those who bring this plan to pass. Many a woman considered unfit by the great industries, many a man injured or worn out by the grind of the factories, will prove to be highly efficient under conditions that are slightly altered to meet the especial need. The wasteful policy of the regular industries may or may not be necessary, but it is likely to necessitate a secondary system of labor. Some day it will be impossible for society to support the number of sick and idle; then the new system will come in earnest.

In their beginning the new workshops will have to be subsidized, for they will count the worker more than the machine and that will mean small returns at first. But there will be few high-salaried officials under the new plan and the profits will go to the workers. That is one of the reasons why such a system may be successful financially in these days of struggling industry.

As I have watched handicapped labor—grateful, loyal labor it usually is—I have been deeply impressed with its possibilities; for I have watched also the slow steps of the dissatisfied and unscrupulous workers in some of the regular industries and I am not sure that the handicapped workers will fall so very far behind.

In any event, the new work must be a great deal more than a plaything. We have no right to ask our handicapped operatives to give their time and strength, even if they improve physically in the process, unless the work is worth while, unless it has a ready market value. That is the final test.

From personal experience with a different class of patients I believe that hospital workshops of varied kinds may become nearly or quite self-supporting. During the past few years I have, as a matter of fact, been able to build up such a business in a small way and a good deal of the time it has been made to pay. This work has been conducted as a private venture with very little outside help.[1] The workers, it is true, have been people of high intelligence and not in need of self-support, but they had given up, they were not able to succeed under ordinary conditions, so the principle is the same. This small business has been under way nine years. During the past four years it has been a little more than self-supporting, although before that it was a decided financial burden.[2] The work has succeeded because we have always had expert workmen guiding and directing at every point. Such shops are, of course, partly professional. I believe that this professional combination must always be followed. Handicapped workers alone are almost surely helpless; working in cooperation with experts they may become a tremendous source of power.

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

[1] Twice within the past nine years I have received a grant of $1,000 from the Proctor fund to assist in the study of chronic diseases.

[2] Owing to enlargement of the plant the workshops have recently failed again to meet expenses.

We have tried hand-weaving, metal-working, wood-carving, leather-working, pottery, basket-weaving, and cement-working. We have dropped all but the pottery, the hand-weaving and the cement-working because we could not see our way to making the others pay.

Last year five persons working in the pottery made and sold six thousand dollars' worth of pottery. Two of these persons were professional potters, one was an apprentice, and two were former patients who because of illness could not meet successfully the conditions of life outside. One of these patients, a woman, had been a surgical patient with profound neurasthenia of long duration. She began her work with little power of sustained effort. The other was a young man so handicapped physically that he might not have been successful even here without medical management. I present this experience simply to show that the idea of using the handicrafts is not altogether impractical.

The money value of handicapped labor has been demonstrated again and again, in institutional life at least. Last summer a small group of men patients at the State Colony in Gardner, Mass., under Dr. La Moure, produced forty thousand dollars' worth of supplies from the hospital farm. That return, at least, would not have materialized without the use of handicapped labor. We hardly need to be assured that the men who worked on that farm were not overworked and that they were physically and mentally better for their experience.

Out on the Pacific coast, Dr. Philip King Brown has within the past two years established a pottery, in which, under expert guidance, a group of convalescent tuberculous girls are paying their expenses—a dollar a day—while they are under sanatorium treatment.

We are beginning to see the possibilities of a principle, which, given systematic application, may change the face of charitable affairs, a principle which may be expected to restore many discouraged and enfeebled workers to full efficiency.

There are many trades and crafts which may be adapted to this purpose. Some of the craftsmen in my shops have been experimenting for the past two years with ornamental cement work as a possible field for hospital shops. We have found, among other things, that practical and beautiful flower-pots and an excellent quality of brick and tile may be made cheaply and expeditiously by people with little strength. We are finding in hand-weaving a field of the most brilliant possibilities. It might be supposed that in these days of machinery, hand-weaving would be a hopeless thing. On the contrary, it is possible to do by hand especial and individual patterns that the power looms would never stop to undertake. There is a ready market for these specialties in weaving and cement.

If possible, we should have some sort of central bureau that can conduct extensive experiments and that can oversee the entire field and help to establish practical workshops where they are most needed. Such a bureau could conduct a normal school for the training of teachers and assistants. A central office would hasten the day of accomplishment by many years. It would save expensive mistakes and might supply materials, designs and formulas, besides answering many puzzling questions which are sure to arise in connection with the technical part of the work and in relation to the effect of occupation on individuals and classes.

There are, of course, pathetic limitations to such a plan and many a willing worker could not succeed; but is evident that a great deal might be accomplished and there ought not to be a long delay in realization.

My suggestion is a definite one—that such workshops as seem most practical be experiementally established in connection with the outpatient service of a few of the general hospitals. In this way we should soon find out in what particular ways employment would supplement the work of the medical and surgical departments. I am sure that the workshops would prove of tremendous value to the social service workers, who are finding it more and more difficult to secure occupation for their charges, and who will tell you without hesitation that vice and crime breed best in idleness.

The plan must not be left to be worked out by enthusiastic, but untrained, people. Such a course would bring delay and discredit on the whole system. Medicine, social service, the crafts and business management, these are the elements that must be brought together if we are to see the best results. I believe that the thing can be easily done and I recommend the matter to your serious attention.

Until the time when this industrial branch of medicine can be taught in a larger and better way, my own little shops at Marblehead are open for demonstration and as a training-school for nurses or craftsmen who wish to go as far as we have gone. It gives me great pleasure to be able to say that the superintendent and trustees of the Massachusetts General Hospital have already seen fit to authorize the establishment of an outpatient industrial department on the lines of the Marblehead workshops. This Massachusetts shop will be in operation within a month, so that it soon will be possible for visiting men to study the principle under actual hospital conditions.

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# MUNICIPAL HOSPITALS AND THEIR RELATION TO THE COMMUNITY *

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Speaking broadly it may be said, without fear of contradiction, that the municipal hospitals of this country are a disgrace from almost every point of view and do not serve the purpose they should in any respect. The exceptions can be counted without difficulty on one's fingers. One of the best is the Boston City Hospital, and the worst, considering the city in which it is situated, is the Cook County Hospital of Chicago. Between these two there are hospitals of all grades. The new Bellevue Hospital in New York could in a few years become a noteworthy institution, but there are many conditions which stand in the way of its development along the best lines possible. In Baltimore there is the beginning of an excellent institution. The same may be said of Cincinnati and of some other cities. Throughout the country there are many well-built hospitals, but there their value almost ceases.

Let us stop for a moment to compare these conditions with those which exist in Germany. There the municipal hospitals are the best in the world, and many towns with a population less than that of the American cities I have mentioned have first-class hospitals from every point of view. Recall for an *instant* the famous hospitals in Berlin, Hamburg, Cologne, Düsseldorf, and many others. Why should there be such a difference when America is so wealthy a country? In Germany hospitals are built and managed by experts. First, there is a most careful consideration of the site by hospital and municipal authorities, and, when this is chosen, the greatest care is exercised in drawing the plans for the hospital, a task again performed by an expert. When the hospital is built, its management is entrusted to trained men. The hospitals in all German cities in which there are medical schools are used by the medical schools for instruction and scientific work, and where there are no schools, the best physicians in the town make up the staff of the hospital. In Germany it has long been recognized that the best service is obtained in any hospital by having it associated with a medical school, and, if that is not possible, by at least having the leading medical men of the community in charge. As a result of this broad point of view, the hospitals in Germany lead in almost every way and are the ones to which we all turn for instruction, not only in the practice of medicine, but in hospital construction as well.

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

It is not altogether easy to explain why the Germans have taken this lead, but there are certain fundamental facts which have played their rôle. The scientific mind of the German has led him to work out this problem as he has others and become a master in it. But why should he have given so much attention to hospitals? Because he has recognized what hospitals mean to the welfare of the community. Again, their development has been absolutely free of the evil influences of political parties. In brief, these may be considered the leading reasons for the position of German hospitals at the head of all others. I shall, as I go on, develop some of these thoughts further and show why it is that America is still so far behind.

In Germany hospitals are show places, like schools, opera-houses, and other municipal buildings, while in this country we would seldom take a stranger to see our municipal hospitals, but rather divert his attention to other places more attractive.

It would require too much time to take up the question of municipal hospitals in France, England and elsewhere, and it is not necessary for the purpose of this paper. All I desire to do now is to point out our own deficiencies as compared with the best and try to show how our defects may be remedied and how we may take an equal rank with Germany in this part of our social life.

I stated a moment ago that the German had built his hospitals so perfectly because he saw what they meant to the welfare of the community, and here I think I may well draw your attention for the moment to one of our national traits, one which has its fine as well as its evil side, and that is our carelessness to loss of life. Yearly, through our indifference, our haste and readiness to put up with evils we might easily control, thousands of lives are needlessly lost by death or wasted by illness. We are improving in this respect, but how slowly! This thoughtlessness has led our cities to the poor construction of hospitals and their still worse administration, or to failure altogether in building hospitals. It is this indifference which accounts for the continued pollution of our sources of drinking-water and the constant prevalence, as a result, of typhoid fever, another cause of loss and waste. When we have had hospitals to build, whom have we selected to do this? Often men absolutely incompetent, who know nothing of what a modern hospital should be, and who do not take the trouble to inform themselves. The best architect cannot build a hospital from intuition. The modern hospital is too complicated a structure to be erected without most thorough study, and the best architect will fail unless he associates himself with those who know the inner administration of a hospital. Plans for hospitals have usually been called for from local architects, who have not the fundamental knowledge necessary, or the architect has been appointed because of social or political influence. I shall not lay too much stress on this point, for we all know how few of our municipal hospitals can be compared at all favorably with those of Germany. The new hospital at Cincinnati is an exception and we may well be proud of it. This is largely due to the study of Dr. Christian R. Holmes and the time and devotion he has given to working out and perfecting the plans. There is no reason why from now on our municipal hospitals should not become models of perfection so far as construction goes.

None will deny that many of our failings are due to political conditions in our large cities. The system of political spoils has interfered in every way with municipal undertakings. When money has been secured in one way or another for the building of a hospital, it has often been extravagantly expended, or wasted through incompetence, or stolen by dishonest contractors. As a result, the community did not get what it should have in the way of a building. This, however, was not the final step in the degradation. After the hospital had been built, it was put in charge of a superintendent who knew little or nothing of his duties, through his "pull" or because some politician wanted to find an easy place for an old and worthless henchman. With this start it was quite impossible to secure the services of the best physicians of the community, for the administration being under political influence, the term of service was most insecure, and at the same time the selection of attending physicians and surgeons did not insure the confidence of the public. The final and general result has been that our municipal hospitals are institutions which the public is now generally ashamed of, and it has good reasons to be.

I have sketched hastily the main conditions of our life which have brought about this most unsatisfactory condition. We are a young country, we have not been inclined scientifically until within a short period of time, we have been and are still extremely indifferent to life and we have been for years in the hands of political ringleaders. These are general principles which with but little change can be applied to almost all of our communities, both large and small. Politics, as thought of in the popular way, has been a game and a business in this country and has influenced our communal life in many ways, both for good and evil.

It may now be asked, What can we do to improve conditions? I do not think that this will be found a difficult task. Our communities are awakening to their physical needs and learning that they need not be playthings for a group of dishonest politicians. All that our communities need is education. Each of us needs education along many lines, and it is not surprising that our people, who have up to the present led easy and successful lives, have paid but little attention to their physical ills and discomforts. The easy conditions of the past have changed, however, in the last few years, and living is no longer easy for a large mass of the population, whose needs require careful attention. A successful, happy community is a healthy one. To be healthy, the community must be provided with those conditions which keep it from being sick and which take care of it when it is sick. The first and foremost requirement to this end is abundance of pure drinking-water, and the second is one or more hospitals.

How many hospitals does a community need? This, of course, depends somewhat on the size of the community, but not altogether, for certain ailments will appear in every community. Where there are children, we shall have the contagious diseases of childhood, and these diseases cannot be cared for in the same building with other non-contagious or non-infectious diseases. In larger cities, the needs of hospitals for various diseases or classes of patients increases; while generally these might be on the same plot of ground, yet it would not always be wise so to construct them.

In a large city there is need of a general hospital for acute medical and surgical cases; one for chronic cases, both medical and surgical; one for contagious diseases, including syphilis and gonorrhea; one for tuberculosis, and one for insane patients. For all of these there should be outside the city at no great distance convalescent homes. I do not think it is worth while in this paper to attempt to draw up any scheme as to the number of beds required, or how a hospital or hospitals of this kind should be constructed. I wish merely to make plain what the needs of a large community are, and what the duties of the community to itself are. It must care for its sick and it should care for them in the best way possible. A patient cannot be given too good care. The quicker he gets well, the greater the saving in the cost to the community. Health means wealth, and a community can well afford to spend sums to prevent illness; sums which seem insignificant when compared to the endless cost of caring for its sick. In caring for its sick, one of the first duties, if not the first duty, of a community is to see that its hospitals fulfill their end, and it should construct them with as much interest and thought as it does its schools, court-houses and city halls. It is not worth while to build expensive schoolhouses if you have sickly children to send to school; and simpler and smaller court-houses would be needed if the health of the community were good, for there would be less crime, and, to go one step further, the greater the health of the community, the less the need of many hospitals. As I mentioned before, the hospitals of a community should be so built as to be attractive, not only to visitors, as that is of comparatively little importance, but also to the sick within their walls.

Too little attention has frequently been paid to certain of the most important parts of municipal hospitals. Not alone the wards but also the kitchen, laundry, boiler and electric-light plants should be hygienically constructed. Too often the kitchen is dirty, ill built and ill placed and entirely lacking in that attractiveness which it should possess. This is also true of the other departments mentioned. In the construction of the hospital it apparently has not been considered necessary to give these dependencies their proper attention, almost all of the money having been put into the wards; but even so, the ward lavatories and water-closets are seldom what they ought to be. They are too small and are usually ill ventilated. On the good planning of the kitchen, laundry, dining-rooms and other quarters for the help depends much of the success and efficient and economical administration of the hospital. The quarters for the nurses also should be airy and comfortable; the nurses should not be housed in overcrowded rooms, badly ventilated and heated. Without giving thought to all of these points and many others in the construction of municipal hospitals it is impossible to secure a first-class institution.

What hospital in this country has thought of disinfecting the water flowing from the necropsy-room, or still more, the waste water of the hospital? This is done in some of the newer institutions in Germany and should be done in all American hospitals if there is danger of the drinking-water of the community being polluted; and where in America does this danger not exist? So long as our drinking-water has to be filtered, it should not be lawful for a hospital to endanger it through contamination with its foul waste-water.

It seems to me very necessary to lay stress on these points, for I believe that municipal hospitals will in the near future become more and more important to the community. Private hospitals are too expensive to be founded and properly supported except by a few rich men, and our municipal hospitals should not rank in attractiveness and value behind private institutions, but should be at least equal to them. No satisfactory reason can be given why persons of all classes should not be willing to go to municipal hospitals for treatment, and this is not the case to-day. In a well-planned municipal hospital there should be graded accommodations for the rich, the middle class, and the poor. To-day the middle class receive in all our hospitals, both private and public, the worst accommodation. By that I mean that they must usually be treated in the public wards, with the riff-raff of our cities, as they (the middle class) cannot afford to pay for private rooms. A municipal hospital could well afford to have suitable semiprivate rooms, into which the middle class could be received and in which they could be made comfortable without having their proper sense of modesty offended.

It would lead me too far to take up special municipal hospitals, such as those for the insane and those for consumptives, but the general principles I have touched on should apply to them, as well as to the hospitals for other forms of disease. We have happily advanced in our treatment of the insane, but in many parts of our country the conditions still existing in regard to the care of this unfortunate class are a disgrace and scandal, not alone to the immediate community, but also to the public at large, as demonstrating both woeful lack of knowledge on the part of the administrators and sometimes a criminal heartlessness.

It is the duty of us who know what reforms are needed to work harder to secure them, and this brings me to the point of how, after a hospital well suited to the needs of the community is once obtained, it can be properly and successfully administered.

The first essential in order to conduct a municipal hospital well is that all those connected officially with the institution should be men or women trained to fill the positions they hold, and that after they have been appointed their terms of office should be secure, so long as they remain competent and honest. Whether the superintendent should be a man or a woman, lay or professional, seems to me a question of no vital importance. For the larger municipal hospitals I think that, with rare exceptions, the best man that can be obtained is a well-trained physician who has business capacity; but there are laymen who make excellent administrators, and many women (nurses for the most part) who conduct the hospitals of which they are in charge with marked ability. A superintendent of this kind should be paid liberally. His services are worth anywhere from

$5,000 to $10,000 a year. He will, with his business knowledge, save the municipality so much annually as to make his salary seem paltry. The waste and extravagance of our municipal institutions is due largely to the fact that they are managed by both dishonest and incompetent administrators.

Your first question might well be, To whom is the superintendent to be responsible for his acts and expenditures? I reply to a board of trustees, appointed by the mayor or city council, or some municipal board. To indicate more clearly how this can be done, let me take as an example one of the largest municipal hospitals in this country—Bellevue and Allied Hospitals, New York. The mayor makes the appointments from nominations made to him by the Charities Organization Society, the Society of St. Vincent de Paul, and the United Hebrew Charities Organization. Some arrangement of this kind is necessary in a community like New York in order to safeguard the interests of all its citizens, who, as you will note, are represented by a Protestant, a Catholic and a Hebrew society. In most of our communities such an arrangement would not be necessary; but a similar, and, if possible, simpler system is advisable. The trustees should be about eight in number, for, if too numerous, they do not work well together, and, if too few, are often likely not to have the requisite judgment on matters that will come to them for decision. The trustees should, I believe, be laymen, although one physician may be admitted as a member of the board. They should be appointed from the leading citizens, men who have shown their ability in the handling of big business organizations. They should be elected for a period, say, of eight years, two being eliminated every two years and two new members appointed in their places. In this way the good government of the institution can best be assured. The two members whose term expires should not be reelected, except after a lapse of two years. Thus the development of a powerful clique is prevented. The board, having been appointed in this way, should be entirely free from all evil political influence. The trustees should be left entirely free to select the superintendent, who should be a man trained for the position; and once appointed by the board, his term should last indefinitely, under good behavior.

The board should serve in an advisory capacity, and to the superintendent should be left the real administration of the hospital, without any interference on the part of the trustees. He is responsible to them for the efficient and honest expenditure of the sums allowed to him, and his reports should be so minutely detailed that all purchases and expenditures can be readily controlled and approved. The superintendent should be absolutely free in selecting all his assistants, superintendent of nurses, matron, engineer, etc. But it is not worth while to go into the minutiae of these details here. I merely wish to impress on you that the board of trustees is an advisory board, and that the superintendent is, or should be, the true administrative head of the institution. He is responsible to the board, as they are in turn to the community.

Under a commission form of government the administration of the hospitals would be somewhat differently regulated, but it comes down to this in every instance, that the superintendent must be appointed for his ability, not for any political reason, and that he shall hold his office so long as he proves his efficiency. His term shall not depend in any instance on the varying phases of the municipality's political forces. To be an able superintendent, proficient in handling a big business organization, for that is what a municipal hospital is, a man must have special training, acquired only by service as an assistant administrator in various capacities in some large hospital. The position calls for the best men obtainable.

In this relationship it is well to call attention briefly to some of the values and defects of the civil service system. Appointments to many positions in a municipal hospital had best be made under civil service rules, but certain positions should be exempt, and these are the superintendent and any member of the medical staff or of the nursing staff. Clerks, orderlies, helpers, maids, etc., are best protected by being under civil service rules, for in this way they avoid all danger of being unjustly dismissed. The civil service system cannot by any examination select the best man for superintendent or the best nurse as head of the nursing staff. No examination can test honesty and executive ability or the other qualities which combined make a good executive officer. So for this reason, these higher positions should not be classified under the civil service system. No hospital can be administered well if the superintendent is selected by a written examination. To a superintendent, presupposedly honest and capable, elected by a board of trustees, can safely be left the appointment of his assistants to the higher positions. If it is thought well, such appointments can then be confirmed or ratified by the civil service board. This makes it impossible for the staff to suffer from the spoils system of any political party, and the fact that he has appointed his own aids, renders the superintendent able to accomplish far more than with men eligible possibly under civil service rules, but who have had no experience and have simply secured an appointment because they were bright enough to pass a not difficult examination.

To the board of trustees it remains to elect the medical staff. The board being composed of leading citizens will be readily able to secure the necessary information as to the best physicians and surgeons to compose the visiting staff, whose number should be controlled by the size and nature of the hospital. Their term of office should be until they have reached the age of 63 or 65, but they, like the superintendent, should be removable for cause.

The medical staff will form of itself the medical board, to meet with the superintendent at stated intervals, and through him to pass their recommendations to the board of trustees. The duties of the medical board are to look after the patients and their welfare. It has nothing to do with the business administration of the hospital.

The medical staff should receive suitable remuneration for their services from the municipality, which, in this way, can best secure the services of the best men. It should be a privilege and honor to be connected with a muncipal hospital, just as it is to be on the staff of a private hospital, and in a few noteworthy instances it is, for example, in Boston, with the Boston City Hospital. I feel convinced that municipal hospitals are in the near future to hold a more important position in the community life, because, as I have said before, private hospitals will be rarer on account of the immense endowment required to support one properly. Hospitals are as necessary to the community as school-houses, and the community should recognize its own duties in supplying its citizens with proper places in which to be cared for when ill or injured. With state universities and state medical schools there must follow as a natural consequence state hospitals, and the administration of these should be as free from "politics" as is the management of our best state universities.

An administration of the kind that I have hastily sketched will secure for our municipalities institutions as ably administered as are our best private hospitals.

Before closing I wish to draw your attention to one point that I shall not discuss at length, for it is an unpleasant one, but one that ought not to be overlooked in our consideration of the present status of our municipal hospitals. Their culpable inefficiency and their inexcusable deficiency in serving the community is in a large measure due to the medical profession. The best physicians have not, up to the present time, generally shown any interest in these hospitals or attempted to make them better. This is partly due to indifference to the public welfare, and partly to the desire to make money, to state it bluntly. Fortunately our indifference to the public welfare is decreasing, but we waste much time in our societies discussing trivialities as to medical ethics, etc., when we had much better be out "doing," forgetting our own little interests in fighting hand in hand with others to aid those who most need our help. Our doctors have often feared to battle for better conditions lest they might lose their positions on the staffs of municipal hospitals, and have lowered themselves to do what the political "boss" told them to do. This is a disgraceful condition of affairs. It exists throughout the country. If the profession will get together and will speak out forcibly for what they know is right and necessary, they will have the people behind them and be able to secure many needed reforms. There is not the least doubt, and it is a reflection on us as medical men, that many of the movements for social reforms which have been and are being accomplished to-day, have not been inaugurated by physicians, but by laymen and by laywomen. We have followed where we should have led.

As you will see, it has been impossible for me to do more than touch on the various points under consideration, and it has been necessary to leave much unsaid. I can only hope to have brought something new and of interest to your attention. The relation of our municipal hospitals to the community is a most important one—one that deserves deep study by all of us.

The Johns Hopkins Hospital.

# ECHINOCOCCUS CYST OF THE PANCREAS

## REMOVAL AND RECOVERY

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I find a twofold reason for reporting this case: first, on account of the great rarity of the condition, and, secondly, on account of the most unusual history and probable mode of infection.

An idea of the incidence of this disease affecting the pancreas may be gained from a brief review of the literature on the subject. Bergmann[1] dismisses the subject with the statement that "echinococcus cysts of the pancreas have been mentioned, but they occur with great rarity." In Keen[2] is found the following: "Hydatid cysts of the pancreas are extremely rare. Masseron was able to collect the records of only five cases. These were first recognized on the post-mortem table. Graham of Sydney writes: 'The hydatid is sometimes found in the pancreas. I have observed it as a cyst about 3 inches in diameter replacing the head of the organ.' Tricomi states, without giving references, that 'seven cases have been recorded.' "

So it may be stated that heretofore the condition has been observed seven times and that at least five of these were found on the post-mortem table, and there was no reference made concerning the other two cases.

V. S., Colon Hospital, No. 47289, a large muscular Russian, aged 35, on Isthmus seven years, came into my outside clinic, June 1, 1913, and gave a characteristic history of duodenal ulcer. The symptoms dated back for a period of nearly seven years. He was admitted to the ward on the same day and carefully observed and examined on two succeeding days. The examination elicited absolutely nothing other than the symptoms of duodenal ulcer. No tumor mass or abnormality could be palpated except a point of tenderness over the duodenum.

June 4, 1913, I operated on him for ulcer and found a comparatively large and thickened ulcer of the duodenum, the inflammatory reaction of which had extended to the peritoneal coat and caused omental adhesions at its most prominent part.

In making a casual examination of the abdomen preliminary to performing a gastrojejunostomy, I felt a cystic tumor mass, oval in shape, about 2½ inches by 3 inches, just to the left of the median line, and bulging the gastrohepatic omentum just above the lesser curvature of the stomach. Careful palpation through a hole cut in the gastrohepatic omentum revealed the mass to be situated in the upper part of the body of the pancreas and extending from near the head to the tail of the organ.

Carefully walling off the surrounding structures with gauze, I opened the cyst and evacuated its contents little by little into a large gall-stone spoon. The cyst had a very thick wall and contained a thick, creamy material, not at all similar to the clear, gelatinous material usually found in echinococcus cysts. There were no daughter cysts, either exogenous or endogenous. The cyst wall came away without any trouble and was thick, grayish, translucent, gelatinous in appearance and quite characteristic of echinococcus cysts.

Dr. S. T. Darling, chief of the board of health laboratory, and Dr. H. C. Clark, pathologist, both of Ancon, demonstrated many characteristic hooklets in the cyst wall. The cyst was surrounded by a brownish débris of putty-like consistency, which showed microscopically much cellular necrosis and degeneration, and many cholesterin crystals. The appearance suggested pancreatic digestion on the cyst wall.

The cavity was lightly curetted and packed with a narrow strip of iodoform gauze, the end of which was brought out at the upper angle of the incision through a large rubber tube. The rubber tube was stitched both to the edges of the cavity and to the skin, providing a channel through which the gauze could be removed and the cavity repacked until it closed up entirely.

For the benefit of the duodenal ulcer an ordinary no-loop posterior gastrojejunosotomy was performed by suture.

A moderate amount of cellular débris came out with the packing for about ten days. The tube was withdrawn and the patient's recovery was uneventful, except for a slight pancreatic fistula which persisted for five weeks.

During his convalescence, I gained from him the following history. He was born in Odessa, Russia, thirty-five years ago. For two years he was robust and healthy; then he sickened and had a disease known as "dedor" (marasmus?) According to the practice of that country then, it was customary to treat children suffering from this ailment by taking them to the abbatoir, stripping them and burying or covering them all over except the face with the entrails of slaughtered animals, or the stomachs were cut open and the patients covered with fresh tripe. The treatment was repeated daily, and this was the treatment given the patient, repeated daily for many days.

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[1] Bergmann: System of Surgery.

[2] Keen: Surgery, iii.

During his childhood and manhood he has been singularly free from contact with the lower animals that might bring him infection. At an early age he was apprenticed to a machinist. He left Russia when he was 18, and since that time has never been in any part of the world in which echinococcus disease was endemic. He is a man of more than ordinary intelligence, cleanly and careful in his personal habits and able to give a clear and concise account of his life and mode of living. It is improbable that he contracted the infection through any carelessness or ignorance on his part.

This brings us to the consideration of the probable time and manner of infection in this case. For the past seventeen years —since leaving Russia—he has led a cleanly life in a part of the world where echinococcus disease is very rare if not entirely unknown. Consequently, I believe we may infer that the chance of his infection during the past seventeen years was very slight.

Concerning the first eighteen years of his life, conditions were somewhat different. He lived in a country where echinococcus disease occurs and we must admit the possibility of infection taking place at any time; yet he gives a history of his earlier years that would seem to make the likelihood of infection slight. His home had no domestic pets, he never played with cats, dogs, sheep or other domestic animals that might transmit the infection, while his trade, that of a machinist, had a tendency to keep him away from the most common sources of infection.

So we are brought again to consider the chances of infection at the age of 2 years when he was buried repeatedly in the entrails of slaughtered animals, and probably beyond a doubt some of them were of cattle or sheep suffering from hydatid disease. The exceedingly close contact with infection which would be brought about by this treatment would seem to make infection not only possible, but probable. Infection probably occurred by ingestion of the ovum and direct migration of the ovum through the wall of the stomach into the pancreas, where it began to develop.

By the appearance of the cyst I would say it had probably been dead for a long time, perhaps a number of years. While the duration of this cyst is merely a matter of conjecture, the history and circumstances are such that one may say there could well be no stronger evidence to a duration of thirty-three years.

The cyst was in a position in which palpation was impossible and percussion would reveal nothing. As it did not interfere with the function of at least part of the pancreas, I believe that it gave rise to no symptoms which might even lead us to suspect the trouble and would be found only on the operating-table or at necropsy.

I wish to thank Colonel W. C. Gorgas for permission to publish this paper.

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**Hexamethylenamin Used to Preserve Caviar.**—Our vice-consul at Moscow writes that the authorities have been petitioned by the Astrakhan Chamber of Commerce to sanction the use of hexamethylenamin as a preservative of caviar until a more satisfactory preparation is found. Of about 1,400,000 pounds of caviar obtained each year by the Astrakhan fisheries, approximately 75 per cent. is exported, and the only preservative thus far found which will keep the caviar fresh is hexamethylenamin. This substance is added to the caviar in the proportion of 1:1300 and therefore, it is claimed, is not present in amounts sufficient to be injurious to health. Approximately 100 pounds of hexamethylenamin are used for this purpose annually.—(*Consular Reports*, Nov. 6, 1913.)

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# A NEW OPERATIVE TREATMENT FOR SPASTIC PARALYSIS

## PRELIMINARY REPORT

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AND
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The purpose of this article is to offer a new operative treatment in selected cases of spastic paralysis. We have now a series of only twelve cases to report, but the results have been so gratifying and even startling, that we feel justified in making a report of the work that has been done up to the present time. We do not assert that the improvement in all of our cases will be a permanent one (sufficient time has not yet elapsed since the operations), and yet we do not see why the improvement should not continue to be more and more marked as the children grow older.

Spastic paralysis is a condition which frequently results from a lesion of the brain occurring before birth, during birth or shortly after birth. It is characterized by more or less complete paralysis of the part affected, and is associated with a stiffness or spasticity depending on the extent of the involvement of the pyramidal tract; this hypertonicity produces muscular contractures and deformities, usually flexor in type, with a corresponding overstretching of the opposing muscular groups, usually the extensors. In mild cases, however, the spasticity may be so slight as to cause little or no deformity, but merely an awkwardness of the part affected. Frequently athetoid movements of the arms and legs may be observed, and epileptiform attacks, commonly of the Jacksonian type, may occur.

In a large percentage of cases as the child grows older, not only do the spasticity and its resulting contractures increase, but also the mentality of the child becomes impaired, and this mental impairment continues until the child may be considered a defective, or still further an imbecile, and only too frequently an idiot.

The most common lesion of the brain producing spastic paralysis is that of intracranial hemorrhage of the new-born. It is usually due to a rupture and tear of either the longitudinal sinus or of its venous tributaries, and of vessels overlying the cortex of the brain, causing a hemorrhagic clot to form over the cerebral cortex. According to the extent and pressure of this hemorrhage over the cerebral cortex, we find clinically the signs of such interference of the pyramidal tract—a spastic diplegia, paraplegia, hemiplegia and the milder forms of spastic paralysis. These lesions form 70 per cent. of the cases of spastic paralysis, whereas agenesis and maldevelopment of the cerebral cortex and the cases of meningo-encephalitis complicating measles and scarlet fever constitute most of the remaining 30 per cent.

The operations which have been used in the past and are still being used to improve the conditions of spastic paralysis, namely, tenotomies, tendon lengthenings, sections of the posterior nerve roots, alcohol injections of peripheral nerves, nerve resections and other operations, are, in our opinion, of only temporary benefit, and we have yet to see a case in which the spasticity has not returned, in some degree, within one year. In all of our cases treated by the operations just mentioned during the past two and one-half years, the spasticity began to reappear within one year after operation.

Tenotomies, besides being unsurgical, are unsatisfactory. Tendon lengthenings (Hibbs' operation) alone are satisfactory in only very mild cases. Foerster's operation for sectioning of the posterior nerve roots of the spinal cord is advocated merely to lessen the irritability and the instability of the cortex of the brain by decreasing the number of afferent stimuli reaching the brain through the posterior nerve roots of the spinal cord and also to affect the reflex mechanism of the spinal cord. Besides being a rather formidable and long operation for a child, the lessening of the spasticity is only temporary, few cases being reported improved longer than one year. Our experience with seven cases has been the same. The injection of alcohol into the peripheral nerves (the Allison and Schwab operation) produces immediate paralysis and a temporary relief from spasticity; in our experience of thirty-one cases, however, the spasticity has returned within one year. With nerve resections (Stoffell's operation), we have had no experience. These operations, however, do not in any way "get at" the primary cause of the spastic paralysis, namely, the lesion of the brain, but are merely peripheral operations to relieve the spasticity temporarily, in the hope that, before the recurrence of the spasticity, sufficient power will have returned to the opposing muscular groups to reestablish the muscle balance. Little, if anything, has been done to improve permanently the condition of spastic paralysis, and we offer our observations in the hope that they may lead to a more satisfactory solution of the treatment of these pitiful cases. Our attention was first centered on the importance of relieving the increased intracranial pressure as a means of lessening the spasticity and improving the mentality of these children, by a decompression operation performed by one of us.

### REPORT OF CASES

CASE 1.—The patient, a child, aged 9, with a left spastic hemiplegia of the flexor type, was moribund at the time of operation, having been in status epilepticus for three days, with little or no nourishment. Artificial respiration and oxygen were being used. The intracranial pressure was very high as shown by an ophthalmoscopic examination and by the signs of medullary compression, and therefore a decompression was performed in the hope that a lowering of the intracranial pressure would afford the child its only opportunity to recover. The usual incision was made. The dura was very tense, and when it was incised, cerebrospinal fluid spurted to a height of 4 inches. Signs of an old cortical hemorrhage were found, and 2 cm. above the upper bony margin of the decompression opening was a rather hard, fibrous tumor, the size of an English walnut. As the condition of the child was precarious, it was thought wiser to remove the tumor at a subsequent operation. The child made an excellent recovery; the spasticity, however, lessened to such a degree that he can walk now with only a slight limp, the heel touching the floor; the left arm and the left hand are now being used for the first time in his life. The after-treatment is being carried out now with the cooperation of the child—something impossible before operation. As the child has improved so much, the parents have not yet consented to the second operation for removal of the tumor.

CASE 2.—The patient, a child of 13, with a history typical of intracranial hemorrhage of the new-born, was a spastic hemiplegic, and on ophthalmoscopic examination, signs of intracranial pressure were observed. Remembering the improvement of the preceding case following a mere decompression operation, we advised and obtained consent for the operation merely to relieve the intracranial pressure in the hope that the spasticity would be lessened and the mentality improved. Similar improvement followed as in the preceding case, although a lengthening of the Achilles tendon was deemed advisable and it was performed the following week.

Since then we have performed the decompression operation in twelve selected cases in all and practically the same improvement has resulted in each case. We have selected for operation only the extreme types of spastic cases.

### METHOD OF PROCEDURE

In those cases of spastic paralysis of the hemiplegic, paraplegic or diplegic type, with a definite history of difficult labor with or without the use of instruments, in which, on ophthalmoscopic examination, signs of intracranial pressure are shown in the dilated retinal veins and a blurring and haziness of the optic disks, especially of their nasal halves, a large right subtemporal decompression is performed to relieve the intracranial pressure. If the intracranial pressure is extremely high and remains high after operation, a left subtemporal decompression is performed the following month, the operative recovery requiring only a week to ten days.

The method of dealing with the various pathologic lesions found at operation will be discussed in detail in the more complete report to be published later. The usual findings are definite cystic formations resulting from a cortical hemorrhage occurring at birth. The decompression operation is performed merely to offset the effects of the pressure of this hemorrhage with cystic formation, and the resulting spasticity and mental impairment.

The after-treatment consists in the correction of deformities by tendon lengthenings or stretchings of the contracted muscles, the maintenance of corrected positions through the employment of especially adapted and properly fitting braces, and skilled massage in conjunction with short applications of galvanism and faradism, particular attention being given to the weakened and overstretched muscle groups. A careful, systematic course in muscle training is carried on daily.

The improvement in our cases selected for operation has been so marked—not only a lessening of the spasticity, but a definite amelioration of the mental condition of the patient—that we believe a cranial decompression is indicated in those cases of spastic paralysis showing intracranial pressure by the ophthalmoscopic examination; of those cases of spastic paralysis which we have examined, about 60 per cent. have shown signs of intracranial pressure, and are, therefore, in our opinion, cases that can be very much improved. This operation is not a formidable procedure for one trained in neurologic surgery; all of our patients have improved and we have had no deaths. The anesthetic should be administered by an expert.

One of the most important advantages of this operation is that the child improves mentally to such a degree that we obtain the cooperation of the patient in the carrying out of the after-treatment.

Naturally, we do not believe that all cases of spastic paralysis should have a cranial decompression; in some mild cases, tendon lengthenings alone are sufficient, and this is especially true in the absence of mental impairment. But those selected cases of spastic paralysis, particularly of the hemiplegic and of the paraplegic types, which show signs of increased intracranial pressure by an ophthalmoscopic examination, are the cases that can be very much improved by such a procedure. The cases of agenesis and maldevelopment of the cortex of course cannot and do not show signs of increased intracranial pressure, and are therefore easily excluded by an ophthalmoscopic examination.

A more complete report will be published later.

20 West Fiftieth Street—104 East Fortieth Street.

## IMPROVED TECHNIC FOR BLOOD-COUNTS: RAPID METHOD FOR SECURING EXACT AMOUNT OF SUSPENSION

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Many clinicians regard total white or red counts as an arduous and lengthy procedure. After noticing that most of their time has been consumed in trying to drop the exact amount of suspension on the counting-chamber, I feel justified in calling attention to the technic which I have found for many years both rapid and exact. It may be original or I may have observed some one else doing the same thing, but so far as I know it is original, and none of the text-books on laboratory technic covers the point in question, being content to say: "A small drop of the solution (?) is carefully placed on the center of the counting-chamber, that is, over the ruled scale. The cover-glass is immediately adjusted before the corpuscles can sink, and pressed down at the margin until Newton's rings appear. If these do not remain after removal of the pressure, the preparation *must be made over again.*"

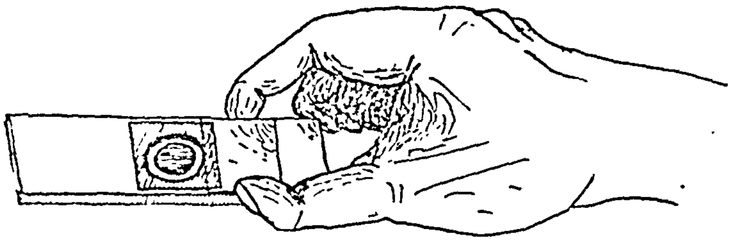

Fig. 1.—Manner of holding cover-glass.

I have observed some clinicians make as many as five or six preparations before obtaining satisfactory results, which can be readily obviated in a single preparation by adhering to the following technic:

After the usual shaking of the pipet, and expulsion of a few drops of the suspension, a good sized drop is placed on the counting-chamber, no particular attention being paid to its size. The cover-glass, which has been previously cleaned, is then rapidly grasped between the thumb and index-finger of the right hand (Fig. 1 and Fig. 2*A*), while the slide is steadied on the table with the left hand. While firm pressure is exerted on the cover-glass it is rapidly slid across the counting-chamber, through the drop of suspension on it. The cover-glass will cut through the drop at exactly 0.1 mm. The excess from the drop will rise on top of the cover-glass and jump across the moat (Fig. 2*B*). Newton's rings will be obtained in each instance. The drop on top of the edge of the cover-glass is wiped or soaked up with the point of a towel or blotting-paper and the preparation is completed.

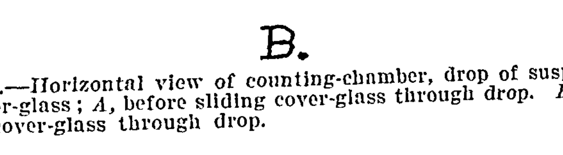

Fig. 2.—Horizontal view of counting-chamber, drop of suspension and cover-glass; *A*, before sliding cover-glass through drop. *B*, after sliding cover-glass through drop.

Precautions to be observed are:

1. Clean cover-glass.
2. Perfectly dry moat.
3. Rapid and perfectly horizontal motion of the cover-glass.

108 Baronne Street.

# Therapeutics

## PUERPERAL INFECTION

(*Concluded from page 1901*)

### TREATMENT OF PUERPERAL INFECTION

If some form of puerperal infection has occurred, of course the first decision is as to whether or not it is local or general. In a local or pelvic disturbance with more or less rise of temperature but without any symptoms of general infection, the treatment should be conservative and more or less symptomatic. The bowels should be carefully attended to, the diet should be simple but sufficient, large amounts of water should be drunk to dilute all the secretions, and Fowler's position should be used more or less continuously to encourage drainage. Again, vaginal douches generally should not be given.

It has been shown that the action of yeast increases leukocytosis and more or less inhibits intestinal intoxication; therefore its administration is good treatment in most infections and is very valuable in pelvic infections. From one-sixth to one-fourth of an ordinary compressed yeast-cake, dissolved in a glass of water, should be given three times a day, unless it causes too much looseness of the bowels. Vaginal douches of yeast solutions have been used and are said to be of value.

Of course the vaginal discharge, or, better, the uterine secretion directly obtained, should be studied bacteriologically to decide, if possible, what infection is present. According to Watkins,[1] the bacteriologic examination of vaginal and uterine secretions is of relatively small value, as the results are often uncertain and misleading. Blood-cultures are the only means at present of accurate diagnosis of the variety of infection. The result of this examination may suggest the use of an antiserum or a vaccine, if either be deemed advisable. The blood should also be examined for pathogenic bacteria.

If a parturient patient has a sudden chill more or less severe, with a rapid rise of temperature which persists in some degree and is not intermittent, and a rapid pulse, puerperal infection has probably developed, unless some serious condition like pneumonia is about to occur. Other symptoms of this general streptococcic infection are: a diminished amount of lochial discharge, perhaps even without odor; more or less tenderness in the pelvic region; a coated and perhaps dry tongue; bad, perhaps septic, breath; scanty urine; severe lumbar pains; tympanites; at times yellowing of the skin, and later, if the infection progresses and becomes serious, possibly delirium. The progress of the fever is that of a typical septicemia. There may be irregular chills, profuse sweatings and more or less leukocytosis. If the lungs, breasts, kidneys and throat have been excluded as the location of the cause of the temperature rise and onset of symptoms, and if the uterus is tender and enlarged, as it generally is, acute puerperal streptococci infection is in evidence.

The insistence here should be on the fact that because there is a septic puerperal infection, it is not forthwith an indication for a uterine curettage, or intrauterine or vaginal douching or any other severe operation. The general treatment just outlined for a more localized simple puerperal pelvic infection should be carried out, with more or less tepid spongings to control the high temperature. The bowels should be freely moved each day, large amounts of water should be drunk and perspiration should be encouraged, though the body should be kept clean by frequent warm spongings and alcohol spongings. The outdoor treatment in Watkins' opinion[1] is the most valuable remedy known as yet in the treatment of puerperal infection. The beneficial effects of that treatment in his cases have been very noticeable, especially as regards improvement in appetite, sleep, temperature and pulse.

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[1] Watkins, T. J.: Puerperal Infection, Am. Jour. Obst. and Dis. Women and Child., September, 1913; abstr., The Journal A. M. A., Oct. 18, 1913, p. 1485.

The heart may be stimulated by infrequent doses of strychnin, not more than 1/30 grain once in six hours, with caffein (perhaps best as coffee) twice in twenty-four hours, if no delirium is present. Camphor is another valuable cardiac and nervous stimulant and 20 or 30 drops of the official spirit of camphor, given properly diluted once in four to six hours, is good treatment in these cases. In emergencies, one, two or three injections of a sterile ampule of camphor solution in oil hypodermically at intervals of an hour will, at times, tide over cardiac depression. Alcohol may or may not be indicated, depending on whether or not the patient can take other nourishment. It should not be used as a stimulant, and the dose should not be large. Whether ergot or hydrastinin should be given must be decided in each case. The ergot will improve the tone of the circulation, but may cause the uterus to contract more than is desirable. Digitalis should not be used except, perhaps, early in the disease, as the inflamed or injured myocardium which results from an infection must not be hurt by the strong contractions which are caused by this drug.

Fowler's position should be maintained to promote drainage, often with the use of uterine retention tubes, and the Murphy drip may be advisable.

The diagnosis of a streptococcic infection having been made, the choice of one or more of the following specific treatments are available:

1. Antistreptococcic serum.
2. A stock streptococcic vaccine.
3. An autogenous vaccine developed from the uterine secretion.

Antistreptococcic serum has in some hands shown wonderful results; in other hands it has failed. It should be used, if at all, in large doses, as it does not seem to do any harm. It often, however, is not at all antitoxic to the bacterial infection from which the patient is suffering.

If vaccines or bacterins are to be used, they should be used early, and the stock vaccine selected must be polyvalent, that is, it must represent several strains of streptococcus, with the hope that one of them will be the one that has infected the patient. Later, these vaccines are not valuable, as then enough of such stimulation is going on in the patient. Therefore, in the advanced or later stages of the infection an antistreptococcic serum, if it were antitoxic to the germ from which the patient is suffering, would be of great value.

If an autogenous vaccine is to be used, it should be produced early in the infection (such a bacterin, in emergencies, can be developed in from eighteen to twenty-four hours) and immediately given. More than one or two repetitions of such an autogenous vaccine at twenty-four-hour intervals would be doubtful therapy, as in an acute infection such as puerperal septicemia the blood is soon producing all of the antibodies that it can. This is a very different process from a slow-going acute or chronic infection in which revaccinations are often of great value.

As these infections are not malarial, unless a malarial germ is discovered in the blood, there is no excuse for administering quinin. If the diet is without meat, iron should be given, and is, perhaps, best administered in 5-drop doses of the tincture of ferric chlorid in fresh lemonade, given three or four times in twenty-four hours. Also the need of the body for lime should not be forgotten and simple lime-water may be used, or calcium glycerophosphate, in powder, in 0.3 gm. (5 grain) doses, three times daily.

If more or less serious uterine hemorrhage occurs, or if the discharges from the vagina are exceedingly fetid, showing decomposition products in the uterus, it may be necessary to institute some operative interference. Perhaps the safest procedure is to administer an anesthetic and to explore and clean the uterus with the finger properly protected. Curettage of an infected uterus is serious and may cause serious results, to say nothing of the danger of perforating the softened uterine wall. It may be repeated that except for serious hemorrhage it is probably rarely advisable to clean out the uterus during septic infection. Decomposition will generally cause a loosening of foreign and pathologic tissues from the walls of the uterus, and they will generally be passed out through the vagina. Also, it should be remembered that in this septic infection the uterine muscle itself is more or less inflamed and softened, and contains, as well as the surrounding lymphatics, more or less of the infecting germ. Also, when the infection is well in progress the bacteria are probably in the blood. Severe local measures, therefore, do not eradicate the disease and may open up other avenues of absorption. It may even be wise, in the presence of uterine hemorrhage, to pack the vagina first to see if the loosening membrane or piece of placenta will come away without actual uterine interference.

It should be urged that intra-uterine injections and douches are rarely, if ever, indicated, are generally dangerous and may do serious harm. Vaginal douches in septic infection, while not so dangerous, may also cause harm and should generally be omitted. In other words, the pressure in the uterine and vaginal cavity should always be negative to the pressure on the other side of the blood-vessels and lymph-vessels to promote exudation into the parturient canal rather than absorption from this canal. There is danger, also, in intra-uterine injections of forcing septic matter into the fallopian tubes. If, later, a pelvic mass is found, whether hematoma or abscess, hot vaginal douches may be allowable and of value in promoting absorption or in hastening localization for vaginal incision and evacuation.

If there is more or less peritoneal inflammation and, therefore, pain, morphin is indicated, as a patient should not be allowed to suffer pain, for depression from acute pain may be the last straw to stop an already weakened heart. Local applications to the lower part of the abdomen in the shape of turpentine stupes or alcohol fomentations may sometimes be of value as counterirritants. Warm applications, as flaxseed poultices, may give some comfort and prevent the necessity of giving much morphin. They often cause a relaxation of the muscular tissues and lessen the irritation and tension. Of course such treatmeint is purely symptomatic and entirely non-specific. If serious infective localization occurs in the pelvis, more serious operative interference may be necessary.

In recovery from this very dangerous infection the convalescence is long and tedious, and months generally elapse before there is a return to normal health.

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SATURDAY, NOVEMBER 29, 1913

## THE REINSPIRATION OF EXPIRED AIR

It is evident to the most superficial observer that under ordinary conditions of breathing some of the expired air must be drawn back again into the lungs. A few experiments to determine the proportion of the breath that is reinspired have been made during the last fifteen years, but no really thorough study of the question was carried out until the recent work of Crowder.[1] This investigator has studied by ingenious methods the effect of such factors as change of position, body motion, different types of breathing and different temperatures, and in addition has determined the conditions that obtain on the sleeping-porch and in the open air. Nasal breathing is the type especially studied; in mouth-breathing there is little or no reinspiration.

The conclusions that may fairly be drawn from Crowder's work are that (1) a person remaining quiet and indoors will immediately rebreathe from 1 to 2 per cent. of his own expired air; (2) when lying in bed the percentage is higher, rising to from 4 to 10 per cent., depending on the position assumed while sleeping. "Nor does sleeping in the open insure pure air for breathing. The same influences here produce the same relative results that they do inside. When one buries his head between pillow and bedclothes for the sake of warmth, reinspiration is inevitable, and it is not necessarily small in amount." In addition, it must be noted that at each inspiration we reinhale not only some of the air just exhaled, but also the air contained in the nose and larger bronchi — the so-called "dead-space" air. This may amount to one-third of the whole volume in quiet inspiration and not less than one-tenth in deep breathing.

The significance of this study in connection with questions of ventilation is obvious. Since even under the most favorable conditions we cannot avoid drawing back into the lungs some of the air that has just passed out of them, not much importance can be attached to the slight variations in carbon dioxid content which occur in the air of rooms. A little deeper breathing seems to be the utmost physiologic effect that could be caused. These experiments also furnish additional evidence against the theory that efficient ventilation consists in the chemical purity of the air, in its freedom from "a toxic organic substance." Even were a poisonous protein substance present in the expired air—a fact no experimenter has yet been able to demonstrate—the human organism under every-day conditions is apparently well able to adjust itself to the reinhalation of this hypothetic substance, since a considerable quantity of the expired air is always taken back into the lungs.

The failure of many expensive ventilation systems to confer the comfort expected from them has been due to neglect of such facts as those here cited. The attempts to "renew" the air by displacing a certain volume at regular intervals were primarily based on the theory that good ventilation was due to freedom from the chemical constituents of expired air. We now know that this practice did not achieve the end aimed at, because the essential factors in good ventilation are not freedom from carbon dioxid or from a mythical organic poison, but are coolness, dryness and motion. Crowder's work brings the old and new theories of ventilation into sharp contrast. "The theory of displacement does not sufficiently take into consideration that all animals possessing lungs ventilate them on a very simple principle of dilution; nor does the pure air theory sufficiently consider that the air of the lungs always remains highly contaminated with their own excretory gases, and that there is such an effective barrier as the dead space against the lowering of the contamination."

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[1] Crowder, Thomas R.: The Reinspiration of Expired Air, Arch. Int. Med., October, 1913, p. 420.

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## ACIDOSIS AND METABOLISM IN DIABETES

In the course of their elaborate studies on metabolism in diabetes, carried out at Boston in the Nutrition Laboratory belonging to the Carnegie Institution of Washington, Benedict and Joslin[1] have reached the significant conclusion that the exchange of matter and energy is distinctly augmented in the course of this disease. This heightened metabolism is not attributable to psychic influences, excessive muscular exertion or increased protein decomposition. Contributory causes like fever and the factors just mentioned were carefully excluded. The tendency toward increase in metabolic exchange appears to parallel the alteration in the intensity of the diabetes.

Acidosis and the attendant production of the compounds leading to ketonuria are a characteristic of the severer types of diabetes. It seems not unreasonable therefore to connect the acidosis with the simultaneously augmented metabolism. Ketonuria can readily be induced in perfectly healthy subjects by the complete withdrawal of carbohydrate from the diet and likewise by starvation. It is only logical, therefore, to ascertain the effect on the metabolism in normal man of an acidosis thus artificially induced. New experiments conducted likewise in the Nutrition Laboratory at Boston[2] have given clear-cut evidence of the stimulation induced in this way.

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[1] Benedict, F. G., and Joslin, E. P.: Metabolism in Diabetes, Publications of the Carnegie Inst. of Washington, No. 135; A Study of Metabolism in Severe Diabetes, ibid., No. 176.

In the experiments here referred to the quantities of beta-hydroxybutyric acid found in the excreta during the period of increased metabolism did not exceed 5 gm. per day. This is far outdone by diabetics, who may show an output of more than 50 gm. with no greater rise in the metabolism than the normal subjects showed in the presence of the smaller amount of acidosis products. It is therefore conceivable, as Benedict and Joslin point out, that the continued production and presence of beta-hydroxybutyric acid as it must occur in the organism of the diabetic develops a degree of tolerance to its specific metabolism-stimulating effect. Whether the latter is in reality a direct action of the circulating acid on the tissue-cells or is due to the diminished alkalinity of the blood remains to be learned. In fact, for the present one is not justified in going beyond the demonstration of the usual simultaneous manifestation of acidosis and heightened metabolism, for in cases of prolonged starvation it has been missed.

In accord with clinical experience the Boston investigators offer the significant reminder that an acidosis of moderate intensity induced by the sudden withdrawal of carbohydrates is more dangerous than a decidedly more severe acidosis attending the more gradual initiation of a carbohydrate-free regimen. The sudden withholding of carbohydrates, which is liable to occur when a diabetic patient enters a hospital or has a change of physicians, may precipitate an acute onset of coma. It is surprising, we are told, how small may be the urinary output of organic acids in such cases. On the other hand, patients with severe diabetes who have been subjected to a strict non-carbohydrate diet for long periods may manifest an acidosis involving 50 gm. of beta-oxybutyric acid in the daily urine without any disturbances directly associated therewith. The sudden complete withdrawal of carbohydrates is always a questionable procedure in diet regulation.

## THE PULSE-RATE DURING SLEEP

The extensive records obtained in the course of the past few years at the Boston Nutrition Laboratory of the Carnegie Institution of Washington have made it evident that there is a close and almost direct relationship in both man and animals between the pulse-rate and total metabolism. If this is true it becomes apparent that under normal circumstances the pulse-rate may be a sort of index of the extent of the chemical changes taking place in the body. Every one realizes from personal experience that muscular movements, which, of course, occasion an increase in metabolism to liberate the energy essential for their performance, are attended with a more rapid heart-beat, the rate varying with the intensity of the exercise performed. The published observations available show, however, that this response of the pulse is more perfect than might be suspected. Not only the more vigorous activities but even unsuspected ones exert detectable influence on the pulse-rate. We recall, for example, the records of Benedict and Talbot[1] on nursing infants. The relationship between carbon dioxid production, pulse-rate and the muscular movements of infants as recorded by graphic methods was very striking. In comparing the pulse of infants of different ages, for instance, a very young baby and an older one, it was noted that there is much less stability of the young babies' pulses than those of the older ones, and a slight motion causes more marked elevation of the pulse. The minimum average pulse-rate depends on the age and type of the baby, and no general rules can be made, because each baby is a law unto itself. The average of the babies in the first week of life was 120 beats per minute and that of the older babies somewhat slower. The average minimum of one baby 3 months old was about 90 beats per minute, and that of another baby of 3 months 100 per minute. Slight movements which were visible practically always elevated the pulse-rate from ten to twenty beats, while violent exercise, such as nursing or crying, increased the pulse-rate from fifty to sixty beats. When the pulse was increased for twenty minutes, as it was during a nursing, it took about ten minutes after the exercise was finished for the pulse-rate to reach the normal. Sometimes it dropped below normal after continued exercise, and remained there for from three to five minutes. The pulse, therefore, did not reach the normal line in some instances until fifteen minutes after the muscular exercise was finished.

The interpretation of the pulse-rate in relation to metabolism at once suggests the bearing of this factor in the daily routine of adult man. No clinical observations are more frequently repeated than those on the pulse-rate, a symptom which every physician continually makes use of at all times of the day. There are, nevertheless, few statistics available respecting the pulse in sleep, a period when muscular activity and metabolism are at a low ebb. Data on this subject have been obtained by Dr. Klewitz in Moritz' clinic at Cologne.[2] The average pulse-rate of persons free from heart defects was fifty-nine per minute during sleep and seventy-four when awake, the subjects in either case being at rest in bed. The variations in the pulse-rate are far less marked than during waking rest. That the lowering of the pulse-rate during sleep is in truth merely the expression of a more decided condition of perfect restfulness is evidenced by the fact that even during waking hours figures as low as those noted in sleep could be observed, provided the degree of rest was as perfect as can be maintained by a person awake. During sleep in the daytime the pulse-rate is scarcely decreased below that which obtains at rest in waking hours.

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[2] Benedict, F. G., and Joslin, E. P.: Ueber den Stoff- und Energieumsatz bei Diabetes, Deutsch. Arch. f. klin. Med., 1913, cxi, 333.

[1] Benedict, F. G., and Talbot, F. B.: Some Fundamental Principles in Studying Infant Metabolism, Am. Jour. Dis. Child., September, 1912, p. 129.

[2] Klewitz, F.: Der Puls im Schlaf, Deutsch. Arch. f. klin. Med., 1913, cxii, 38.

From a clinical point of view it is interesting to note that the conditions just recited also exist in patients with valvular defects in whom the cardiac deficiency has become compensated; but when the latter is not the case the pulse-rate is not so characteristically decreased in sleep. The extent of the decrease in the heart-rate is in a way indicative of the degree of compensatory changes which has been established, so that the comparison of the pulse-rate in sleep and in waking hours may have some prognostic value. Irregularities of the heart, such as extrasystoles, etc., do not disappear in sleep. Tachycardia due to organic defects is likewise not obliterated by sleep; but when the accelerated heart-rate is associated with purely nervous causes, the tachycardia disappears in sleep. Here again the determination of the pulse-rate may furnish a help in differential diagnosis.

## THE CONSEQUENCES OF INTESTINAL OBSTRUCTION

The occasion of the severe symptoms and frequently fatal outcome of high intestinal obstruction and the cause of death from volvulus have of late attracted unusual attention from surgeons and other investigators. Certain facts seem clearly established. High loop obstruction in animals, for example, may cause very rapid death, in from twenty-four to sixty hours, as a rule, even when the loop contains no food material or secretion from the stomach, liver or pancreas. Low loops of similar nature in the region of the ileum appear to be less rapidly productive of fatal results. To quote a few illustrative instances, Bunting and Jones have found that in rabbits obstruction of the duodenum is more quickly fatal than obstruction of the pylorus or of the ileum. Whipple, Stone and Bernheim, among others, have noted that dogs having closed duodenal loops die with symptoms like those of patients suffering from volvulus or high intestinal obstruction. It would take us too far to attempt to review here the important contributions which have been made to the solution of the problems concerned with intestinal obstruction.[1] Some of the debated points seem now to be definitely settled. Thus, among the classic explanations of death in obstruction, infection was early given a prominent place. Hartwell and Hoguet[2] have demonstrated by bacteriologic examination on dogs with high intestinal obstruction that death may result without demonstrable invasion of the blood-stream, peritoneum, liver or spleen by organisms. This and other work practically rules out the infection theory. Murphy (F. T.) and Vincent have championed the view that interference with the circulation of the obstructed intestine is the vital factor in the symptoms of ileus; but we believe that there is abundant evidence that death may occur when the intestinal obstruction is uncomplicated by any circulatory interference. Obviously damage to the intestine produced by disturbances of the circulation, particularly venous obstruction, leads to more fulminant and disastrous reactions than simple obstruction alone; but the circulatory factor is incidental and contributory here, and not the determining issue.

A further explanation of the cause of death in obstruction postulates an intoxication from within the lumen of the bowel itself. The hypothetic toxic substance has been referred by some to the activity of bacteria and to noxious substances arising within the intestinal lumen, whereas others postulate the secretion of a poisonous product by the glandular structures and walls of the alimentary tract. It is about this toxin theory that a vigorous scientific debate has lately been carried on by American investigators. That the poison is derived from bacterial life in the obstructed loops is no longer prominently defended. The bacterial flora of the upper alimentary tract is relatively scanty about the duodenum and upper jejunum and becomes much more luxuriant toward the large intestine. The more recent researches agree in showing that the part of the intestine poorest in bacterial inhabitants is that which yields most rapidly fatal results when obstructed.

There remain for consideration the variously conceived hypotheses involving the production or secretion of a poisonous substance by the mucosa itself. Draper believed that the "toxin" is contained in the duodenal secretion and is normally neutralized by the secretion of the mucosa of the jejunum and ileum. Consequently in obstruction of the upper bowel the harmful outcome was due, on this theory, to the inability of the antidotal product of the lower portions of the intestine to offset the duodenal poison. This purely hypothetic explanation has been made improbable by experiments of Whipple, Stone and Bernheim in which duodenal loop fluid was found to lose none of its toxic character when mixed with normal intestinal mucosa. Bunting and Jones have reached the conclusion that, in rabbits at least, the duodenal mucosa alone secretes the poison, and that it comes from the glands of Brunner and is responsible for the death of animals with obstruction.

The most ardent advocates of the toxin theory are Whipple, Stone and Bernheim. From the results of very elaborate studies they have come to the conclusion that the mucosa of closed duodenal loops, the latter employed because they induce the typical symptoms of death from high obstruction, must form a poisonous substance which is absorbed from it and accounts for the fatal issue. The material from such loops can be prevented from containing bile, pancreatic juice, gastric juice or digestion products, any of which might independently have been responsible for the intoxication if perchance owing to obstruction they were absorbed as such. The toxic substance is not absorbed from the normal intestinal tract. Destruction of the mucosa prevents the formation of the toxic substance, thus furnishing the final proof that the mucosa is the essential factor in the elaboration of the alleged poisonous material.

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[1] Compare, for example:
Kukula: Arch. f. klin. Chir., 1901, lxiii, 773.
Albeck, V.: Ibid., 1902, lxv, 569.
Clairmont, P., and Ranzi, E.: Ibid., 1904, lxxiii, 696.
Draper-Maury, J. W.: Am. Jour. Med. Sc., 1909, cxxxvii, 725.
Murphy, F. T., and Vincent, B.: Boston Med. and Surg. Jour.,
1911, clxv, 684.
Hartwell, J. A., and Hoguet, J. P.: Am. Jour. Med. Sc., 1912,
cxliii, 357; The Journal A. M. A., July 13, 1912, p. 82.
Stone, H. B.: Bernheim, B. M., and Whipple, G. H.: Bull. Johns
Hopkins Hosp., 1912, xxiii, 159.
Bunting, C. H., and Jones, A. P.: Jour. Exper. Med., 1913, xvii,
192; 1913, xviii, 25.
Whipple, G. H.; Stone, H. B., and Bernheim, B. M.: Ibid., 1913,
xvii, 286, 307.
Hartwell, J. A.: Ibid., 1913, xviii, 139.

[2] Hartwell, J. A., and Hoguet, J. P.: Am. Jour. Med. Sc., 1912,
cxliii, 357.

These far-reaching conclusions, charging hitherto unsuspected potencies for harm to the intestinal lining, have been vigorously opposed by Hartwell and Hoguet, who have pointed out that animals with obstruction of the lower duodenum vomit profusely. The urine shows marked abnormalities when compared with the kidney secretion in simple starvation; but if a quantity of normal saline slightly in excess of the total loss of water in the urine and vomitus be given daily in the form of hypodermoclysis, the animals return to the conditions characteristic of simple starvation and may live in excellent health for long periods. According to these investigators, therefore, the important element in the development of the toxic symptoms seen in intestinal obstruction is the hitherto unappreciated loss of water. The symptoms of intoxication are those resulting from tissue disintegration following this loss. When strangulation complicates obstruction, however, these facts do not suffice to explain the outcome.

In his most recent contribution to the subject, Hartwell[3] insists that simple stagnation does not yield a poisonous substance. According to him the only poison present in intestinal obstruction arises from the damage secondary to the obstruction, and not from the stagnation of intestinal contents or an altered function of a normal-appearing mucosa. In explanation of the experience of the opposing school Hartwell points out that in their experiments injury to the intestinal wall has been common, as judged from the necropsy records, and that in the absence of such damage there is no primary toxemia.

Clinical intestinal obstruction is almost invariably associated with a damaged intestine, and consequently it is fair to assume that a poison is produced with this condition. The valuable experimental work in which so many enthusiastic investigators have been active has made it clear that large amounts of saline subcutaneously may be used with advantage, patients having readily absorbed from three to six quarts in twenty-four hours. Hartwell maintains that in man there is no necessity of draining out the intestinal contents, which has been urged by the believers in the theory of a secreted toxin, unless the bowel is damaged. Simple stagnation does not yield a poisonous substance, and consequently the release of the obstruction by operation is sufficient. When, however, strangulation has begun, the material above the obstruction should be removed, and if extensive damage exists, a continued drainage through an enterostomy may be needed.

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[3] Hartwell, J. A.: Jour. Exper. Med., 1913, xviii, 139.

# Current Comment

## THE HEALTH TRAIN AS A STIMULUS TO SANITATION

The value of the health train, now being employed in some states to educate the people on the value of better hygiene and sanitation, is undoubted. It gives direct instruction in personal and community hygienic principles, and the printed reports of the inspectors accompanying the train concerning the towns and villages through which the train passes have become a strong stimulus to sanitary improvement. This is accomplished both through appeals to local pride and through light thrown on specific defects. The State Board of Health[1] of Michigan during the summer ran a health train through the state, touching at many points. Great interest was manifested in the lectures and the exhibits connected with the train. In the report of the inspectors, the sanitary shortcomings of many villages are set forth in plain terms. For instance, of one town it is said: "Health sentiment is at a low ebb here. The health officer was attending a picnic, but the flies were attending to business in the unscreened, filthy privies and garbage-heaps around the town." This particular town is not likely to be proud of this report, and the health officer will undoubtedly begin to clean things up. In contrast to this it was said about another town: "This is the most all-round sanitary little village visited by the special. A good progressive president and health officer, backed by a splendid sanitary sentiment." In many places it was found that the health department was active and efficient, but was not supported by the proper public sentiment. This is the chief shortcoming of most places, on the part both of the citizens and of the city or town authorities who fail to vote sufficient money to carry out sanitary measures effectively. While there was no intention of being hypercritical, the truth was plainly told in the report and without doubt the awakening secured by the health train and the report on sanitary conditions will work a great improvement. Michigan, of course, is not different in this regard from other states, and the report on conditions there would probably apply almost exactly to any state making a similar inspection. The method of teaching personal and public hygiene by the health train is a modern invention that should be encouraged.

## HEALTH PROBLEMS IN JERUSALEM

The triumphs of modern sanitation have furnished so many conspicuous illustrations of what can be accomplished by the practice of the teachings of modern scientific hygiene that the possibilities involved have already become familiar to the reading and thinking public of the United States. The experience of our government alone, culminating in the splendid success of Colonel Gorgas in the Panama Canal Zone, cannot fail to awaken an eagerness to apply comparable measures speedily in all parts of the world where health conditions and sanitary environment suggest the possibility of work in the direction of eliminating disease. A conspicuous instance of the need for such work is furnished at present by Jerusalem, a city in which one out of every five of its 70,000 inhabitants carries the parasite of malaria in his blood and three-fifths of the population give evidence of enlargement of the spleen. These facts, so striking because of the enormous incidence of preventable disease and so pathetic because they mean so large a loss of human usefulness, are not hearsay figures. They are, on the contrary, the outcome of investigations by a scientific commission at the Health Bureau of the Jewish Agricultural Experiment Station in Jerusalem. This laboratory of hygiene, endowed in 1912 by the New York philanthropist Nathan Straus to combat the endemic diseases of Jerusalem, malaria in particular, has rendered a report[1] from which the statements made above have been quoted. The city is not unfavorably situated from the point of view of climate or elevation; nevertheless it is the home of disease in its most varied manifestations. This is due primarily to the great poverty of the population; and added to this is the indifference or ignorance of the Turkish officials in matters of hygiene. In the light of present-day knowledge the pictures of the primitive sanitary arrangements that still obtain in ancient Jerusalem would furnish an interesting object-lesson. As might be expected, *Anopheles* reigns supreme. The chief breeding-places of the mosquito are the cisterns which provide to the inhabitants the water-supply conserved from the rain which reaches the house-tops. Primitive privies are all too frequently found in close proximity to the drinking-water cisterns. It is an old story, the foremost interest in which now lies in the extent of the invasion of disease, especially malaria, and the consideration of the best means for combating this under the rather unusual conditions that prevail in a city where every nationality and religious sect seeks to maintain its territorial and governmental independence under the manifestly helpless jurisdiction of Turkish officials. Elsewhere the extermination of the anopheles mosquito by drainage, the use of petroleum oils, etc., has been effectively combined with prophylactic administration of quinin. A complete and expensive program cannot yet be carried out in Jerusalem. A beginning has been made by the introduction of screening-devices for the cisterns. Bacterial infections are to be eliminated in part by attention to the problems of sewage disposal. It is easy to outline ideal plans for the improvement of the unfortunate conditions which have so long been tolerated in such places as Jerusalem. The actual work of sanitary conquest must, however, keep pace with the advance of general enlightenment and political and economic progress, unless a superior power somehow is introduced which will put an end to apathy in regard to matters of hygiene.

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[1] Bull. State Board Health, August, 1913.

## PUBLIC OPPOSITION TO PROTECTIVE MEDICAL MEASURES

Opposition to legislation designed to regulate the practice of medicine, but almost wholly in the interests of the public, seems not to be confined to this side of the world. A bill introduced into the legislative council of South Australia to make better provision for the registration of medical practitioners, according to the *Australasian Medical Gazette*,[1] has created a great deal of unfavorable comment. Under this bill it is proposed to restrict the practice of medicine and surgery to those legally qualified and registered within the meaning of the act, and all practice by herbalists, dispensing chemists and quacks of all description is prohibited under penalty. The usual objection has been raised that the wording of this particular act might penalize any one who might advise a friend to take a dose of castor oil for a common ailment, or a mother who might help to relieve from pain a neighbor's child. The *Gazette*, in commenting on this opposition, says that it seems almost impossible to drive into the mind of the layman that any "common ailment" may be a symptom of a serious disease, and that the administration of a dose of castor oil to a patient suffering from constipation might be a very serious matter if the constipation were due to strangulated hernia or intestinal obstruction. It is further said that until the general public can be better educated in medical matters some will always be found who prefer to trust their lives to the heaven-inspired herbalist or quack rather than to the educated medical practitioner. It would seem also that the wolf cry, "medical trust," is raised in the antipodes as well as on this side of the earth, for the comment is made that, "unfortunately, the medical profession generally incurs public odium in any attempt to secure legislation which may protect the profession, but which helps to a much greater extent to protect the public. We are accused of attempting to establish a close monopoly. . . . The profession of medicine has a right to be protected from the competition of uneducated and unscrupulous quacks who trade on the credulity of the public, but the general public have still greater need to be protected from themselves and their own ignorance and from the 'assistance' of the writers in the lay press who fail to grasp the seriousness of the situation in advocating the recognition of the herbalist, the optician, the dispensing chemist, as competent to give medical and surgical advice." What a complete and perfect echo is this of conditions on our own side of the world!

## COLLEGE ENTRANCE EXAMINATIONS, JUNE, 1913

During the week beginning June 16, 1913, under the auspices of the College Entrance Examination Board, 4,159 high-school students were examined for entrance to various colleges. The examination covered sixteen subjects, for each of which three examiners had been selected, two being teachers in colleges and one a teacher in a secondary school. Altogether, therefore, there were forty-eight examiners, experts in their various subjects,

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1. Brünn, W., and Goldberg, L.: Die Malaria Jerusalems und ihre Bekämpfung, Ztschr. f. Hyg. u. Infectionskrankh., 1913, lxxv, 209.

1. Australasian Med. Gaz., Sept. 13, 1913.

who prepared the questions for the examination. The examinations were held simultaneously in forty states of this country, and in eight dependencies and foreign countries — altogether, in 170 different cities. The examination in each city was given at some trustworthy educational institution, under selected supervisors and proctors. After the examination papers were completed they were placed in charge of readers who did the grading. This year 147 readers were appointed to grade the papers, and of these, eighty-five were representatives of colleges and sixty-two were representatives of secondary schools. In fees from candidates examined $22,335 was received. For the preparation of the questions and other service the forty-eight examiners were paid $1,629 for salaries and expenses; for grading the papers, the 147 readers were paid $12,562 for salaries and expenses; for supervision of the examinations and for proctors $2,836 was expended for salaries and expenses. Those interested in preliminary examinations should read the Thirteenth Annual Report, which may be obtained from the secretary of the board, Substation 84, New York City. When it is seen that our colleges are arranging a single, well-conducted, thorough and uniform examination covering the secondary school branches, one can but wish that all high-school examinations for admission to medical colleges might also be conducted under the auspices of the College Entrance Examination Board. This would do away with the present confusion of standards and ratings resulting from the multiplicity of agencies now issuing certificates for entrance to medical schools. Here, indeed, seems to be a solution of the gravest problem of our medical schools—the securing of a thorough and reliable "equivalent" credential by those who have not been fortunate enough to complete a course in a standard four-year high school. Here again is an examination conducted along such lines as to place it entirely above suspicion, making it worthy, therefore, of general acceptance.

## DANCING

It seems somewhat late to enter a mild protest against the fervor with which the newest "so-called" dances have been taken up by a public already saturated with various nerve- and mind-destroying amusements and caprices. It seems unnecessary to call attention to the fact that the tango, the various waltzes, the maxixe, etc., are being arduously cultivated by callow youth and calloused old age. The problems created by these dances differ according to the age of the participants; for the young the question of morality is paramount; for the old the possibility of too great a strain on a dilated heart or an arteriosclerotic vessel is apparent. The physician will do well to caution the stiff-jointed, aged patient, who derives too great a pleasure from these — to him — potentially harmful amusements.

**All Treatment an Experiment.**—All treatment, however carefully chosen, is in the nature of an experiment, for none can know the exact effect of any treatment or drug on any individual patient until he has tried it. A drug may suit ninety-nine persons but be injurious to the one-hundredth because of some idiosyncrasy.—F. M. Sandwith, in *Clin. Jour.*

# Medical · News

## CALIFORNIA

**Typhoid Inoculation at University.**—Antityphoid inoculation is being administered free to the students and faculty of the University of California. Thus far immunization is optional.

**Hospital Dedicated.**—The new Mercy Hospital, Bakersfield, was dedicated November 9, with impressive ceremonies by Right Rev. Thomas Conaty, bishop of Monterey and Los Angeles.

**Sanatorium Incorporated.**—The Oaks Sanatorium has been incorporated at San Jose with a capital of $50,000, and the following officers have been elected: president, Dr. Richard F. Tomlinson, San Francisco; secretary, Dr. Lily Boldemann, San Francisco; treasurer, Dr. William Boericke, San Francisco, and medical superintendent, Dr. Mary C. MacInnes, Los Gatos.

**Fund for Medical Building.**—The Board of Regents of the University of California announced November 11, the completion of the additional fund of $600,000 for the erection of the hospital building which is to be a part of the College of Medicine of the University. It was stated that the principal donations to the fund were from Mr. and Mrs. William H. Crocker, Templeton Crocker and Mrs. C. B. Alexander, New York, who contributed $150,000, and John Keith who also donated $150,000. A committee was appointed to administer the fund and supervise the erection of the building.

**Personal.**—Dr. J. M. G. Carter, Los Angeles, has donated his medical library and many scientific books to the University of Southern California.——Dr. C. L. McKown, Niles, who has been ill with septicemia at Pacific Grove has recovered and resumed practice.——Dr. Charles T. Palmer, assistant health officer of Los Angeles, is said to have been committed to the State Hospital for the Insane, Patton.——Fresno County Medical Society was entertained at dinner by Dr. C. T. Rosson at his home in Hanford, November 4.——Dr. C. H. Adair, Fresno, was struck by a street-car November 4 and seriously injured.——Dr. A. F. Gillihan, Berkeley, has been appointed health commissioner of Oakland as the result of a competitive examination.

## ILLINOIS

**Death of Dr. W. K. Newcomb.**—As we go to press we learn *of the death of Dr. W. K. Newcomb of Champaign.*

**Contract Let for Hospital.**—The Cook County Board has awarded the contract for the tuberculosis hospital and other buildings at Oak Forest for $581,467.

**New Officers.**—Fox River Valley Medical Society at Aurora, November 18: president, Dr. Raymond G. Scott, Geneva; vice-president, Dr. Ora L. Pelton, Elgin.

**Health Bureau for LaSalle.**—Through the beneficence of Mr. F. W. Matthiessen, LaSalle, the cities of LaSalle, Peru and Oglesby are to have a model health bureau in charge of an expert commissioner, health officers and sanitary inspectors. The expense of the undertaking will be about $20,000.

**Personal.**—Dr. and Mrs. John A. Pratt, Aurora, and Dr. Carroll B. Welton, Peoria, have returned from abroad.——Dr. Rockwood Sager is reported to be critically ill with a cerebral hemorrhage at his home in Rockford.——Dr. and Mrs. Theophil J. Holke, Peotone, sailed for Europe November 22.——Dr. Harry M. Hayes, Peoria, is seriously ill with typhoid fever in Proctor Hospital.

### Chicago

**Physicians' Club.**—At the opening meeting of the Physicians' Club of Chicago December 5, at the Hotel Sherman, Prof. George A. Dorsey of the University of Chicago will preside and Lieut.-Col. Charles E. Woodruff, M.C., U.S.A. (retired), will speak on "Medical Ethnology."

**Personal.**—Dr. and Mrs. Plumer M. Woodworth, who have been spending four months in California, have left for Honolulu, where they will spend the winter.——Dr. Sarah A. Noble has returned from Europe.——Dr. Andrew M. Harvey has been elected president of Local Council No. 3 of the National Council for Industrial Safety.——Dr. and Mrs. Charles Adams left Chicago for their new home in Honolulu, T. H., November 22.

## MASSACHUSETTS

**Sanatorium Fire.**—Fire in one of the buildings of the Ring Sanatorium, Arlington Heights, November 17, necessitated the transfer of five patients and caused damage amounting to $2,000.

**New Officers.**—Boston Society of Medical Science at Harvard Medical School, November 18: president, Dr. Theobald Smith; vice-presidents, Drs. Henry A. Christian and David L. Edsall; secretary-treasurer, Dr. Thomas Ordway.

**New Antituberculosis Officers.**—At the annual meeting of the Springfield Association for the Prevention of Tuberculosis, November 12, Dr. George L. Schadt was elected president, and Drs. Allen G. Rice, Edgar H. Guild and Ralph B. Ober were elected members of the executive committee.

**Hospital Staff Election.**—At the annual meeting of the North Adams Hospital Staff November 10, it was announced that Mrs. A. L. Hopkins, Williamstown, who gave the laboratory to the hospital a year ago, is offering to provide an assistant to the pathologist of the institution. Dr. Augustus K. Boom, Adams, was reelected president and Dr. Francis J. O'Hara, North Adams, vice-president, and a conference board consisting of Drs. Martin M. Brown, Frank D. Stafford and John R. Hobbie was named to confer with the hospital authorities on matters pertaining to medical attendance at the institution.

**Reporting of Occupational Diseases.**—The State Board of Labor and Industries and the Industrial Accident Board are making arrangements through subcommittees for a public hearing at the State House in regard to the adoption of a regulation requiring all physicians to report occupational diseases to the joint board, this hearing to be held as provided for by Section 2, Chapter 813, Acts of 1913. Representatives of all the medical societies of the state and physicians generally will be invited to attend the conference, and the meeting will be addressed by the experts engaged by the special committee created by the joint board, James B. Carroll, James A. Lowell and Mrs. Davis R. Dewey. Arrangements for the proposed meeting are in the hands of a subcommittee, consisting of James W. Crook, Joseph A. Parks and Channing Smith. It is expected that a comprehensive plan for the reporting of occupational diseases will be developed as a result of the conference.

**Mental Diseases and Alcohol.**—A conference on the problems of mental disease due to alcohol, open to physicians and officials dealing with the alcohol problem, was held in the assembly room of the Psychopathic Hospital, Boston, November 24, under the auspices of the trustees of the Boston State Hospital and the legislative committee on drunkenness. After introductory remarks by Dr. Walter Channing of the Boston State Hospital, the scope of the work of the Massachusetts commission on drunkenness, 1913, was detailed by Hon. M. J. Murray, chairman of the commission; Dr. H. M. Adler described, with clinical demonstrations, types of alcoholic mental disease at the Psychopathic Hospital; Dr. T. E. Eversole read a paper on "Consensual Amyosis to Blue Light as Shown in Alcoholic Cases." Dr. H. M. Adler made some further remarks on therapy, especially hydrotherapy in various hyperkinetic states; Drs. A. W. Stearns and Mary C. Jarrett presented notes on the after-care and moral suasion work with alcoholics in the outpatient department of the Psychopathic Hospital, and Dr. E. E. Southard, director of the hospital, discussed "The Alcohol Problem Viewed From the Angle of the Psychopathic Hospital." The presentation of these papers was followed by a general discussion.

## NEW JERSEY

**New Jersey Sanitary Association.**—The thirty-eighth annual meeting of the New Jersey Sanitary Association will be held at the Laurel-in-the-Pines, Lakewood, December 5 and 6, under the presidency of Dr. Benjamin VanD. Hedges, Plainfield.

**New Officers.**—Mercer County Medical Society at Trenton, November 11: president, Dr. Harry R. North; secretary, Dr. Walter A. Taylor, both of Trenton.——Tri-County (Salem, Gloucester and Cumberland) Medical Society at Bridgeton, October 28: president, Dr. E. S. Corson, Bridgeton; secretary-treasurer, Dr. George E. Reading, Woodbury.

**New Board of Health Building Dedicated.**—The new four-story Board of Health building at William and Plane Streets, Newark, was dedicated with simple ceremonies, November 8. The keys of the building were turned by the mayor to Dr. Herman C. H. Herold, the health officer, but the Board of Health will not occupy the building until the first of the year.

**Pavilion Plans Approved.**—The preliminary plans for the proposed tuberculosis pavilion and hospital annex at the Overbrook Hospital for the Insane were approved by the freeholders' committee at Newark, November 10. The pavilion will accommodate sixty-seven women and fifty-five men and will cost about $130,000. The proposed additional hospital wing, which will accommodate 200 patients, will be 200 by 40 feet, and will cost about $180,000.

## NEW YORK

**Health Department Exhibit at State Fair.**—The State Department of Health installed an entirely new health exhibit at the state fair this year. It was divided into three sections: Home and farm sanitation, care of the baby and the child's health at school. In the sanitation exhibit there was a landscape model illustrating the pollution of streams through a large stretch of country; a model of an inexpensive sewage disposal plant for a country house, and models showing the pollution of well water and the layout of a sanitary farm.

**Epidemic Sore Throat.**—Numerous cases of septic sore throat and glandular involvement have been reported from various portions of the state. The patients have frequently been ill for several days with mild sore throat and temperatures of from 101 to 102 F. for several days. There is sometimes a light induration of the lymphatics at the angle of the jaw. The condition seems to be very communicable and the State Health Department recommends that patients suffering from this condition should be isolated and not allowed to mingle with other members of the household. It is also recommended that cultures be taken from the throats of all who come in contact with such cases and that they be watched to see if sore throat, or glandular enlargement, or possibly a rash or desquamation follows in two or three weeks.

### New York City

**Harvey Society Lecture.**—The fourth in the present course of Harvey Society lectures to be delivered at the New York Academy of Medicine November 29, at 8:30 p. m. by G. H. Parker, Harvard University, is on "The Nervous System; Its Origin and Evolution."

**Street Fatalities for October.**—During October thirty-six children were killed in New York City by automobiles and other vehicles. This number is the highest on record and brings the total of children killed by all classes of traffic since January up to 227. Automobiles have furnished 60 per cent. of the victims of traffic in Greater New York. The National Highways Protective Association urges better playground facilities or any policy which will relieve congestion of population as a material aid in decreasing the number of street deaths by accident.

**Corner-Stone of New Dispensary Laid.**—The corner-stone of the new dispensary in connection with the Hospital for Deformities and Joint Diseases was laid on November 4. Among those who made addresses were Dr. Abraham Jacobi, Rabbi Maurice Harris, Judge Julius Mayer, Dr. Reginald Sayre and Felix Warburg. Dr. Herman C. Frauenthal is surgeon in chief of the hospital, which during the past year has taken in 4,023 new cases, 600 more than in 1912, and 3,811 more than in 1907. It was announced that $50,000 more was needed to complete and equip the dispensary.

**Personal.**—Dr. James W. Jobling of the Morris Institute for Medical Research in Chicago has been appointed assistant professor of pathology to succeed the late Dr. Hugh Angus Stewart.——Dr. Frederick S. Lee, Dalton professor of physiology of Columbia University, has been appointed delegate to the University Council from the faculty of medicine, to serve until June 30, 1916.——A memorial window to the late Dr. James Edward Newcomb has been placed in the hall of the Stony Wold Sanatorium, Lake Kushaqua, N. Y., and dedicatory exercises will be held there October 22.

**Society for Advancement of Clinical Study Begins Work.**—The Society for the Advancement of Clinical Study in New York issued its first bulletin of clinics for November 7. The society maintains a bureau at the New York Academy of Medicine, where the list of operations open to physicians is posted daily, together with the time of operation and the name of the operator. The bulletin of operations will be mailed to any physician for 50 cents a week, and to hospitals sending in regular reports of their lists of operations, it will be sent free of charge. It is believed that this method of informing physicians of the city what is being done in the various clinics and making it possible for them to visit these clinics is a great step in advance in dissemination of medical knowledge.

## OREGON

**Alumni Banquet.**—The Alumni Association of the Medical Department of the University of Oregon held a meeting and banquet in Portland October 13. Dr. William E. Smith, president of the medical branch of the Alumni Association, acted as chairman, and Dr. A. G. Bettman as secretary.

**Meeting of Eastern Oregon Physicians.**—The annual meeting of the Eastern Oregon Medical Society was held at Hot Lake October 29. Dr. M. K. Hall, La Grande, was elected president, Dr. W. D. McNary, Pendleton, vice-president, and Dr. T. M. Henderson, Pendleton, secretary-treasurer (reelected).

**Social Hygiene in Oregon.**—At the second annual meeting of the Oregon Hygiene Society held in Portland, October 17, Dr. Calvin S. White was elected president, Dr. William House chairman of the publication committee, Dr. Andrew C. Smith chairman of the advisory committee, and Dr. G. N. Pease chairman of the exhibit.

**State Association Meeting.**—At the thirty-ninth annual session of the Oregon State Medical Association held in Medford the following officers were elected: president, Dr. Calvin S. White, Portland; vice-presidents, Drs. R. W. Stearns and J. J. Emmons; secretary, Dr. M. B. Marcellus, Portland (reelected). Portland was selected as the next place of meeting.

### PENNSYLVANIA

**Physician Exonerated.**—A verdict exonerating Dr. Victor P. Vieslet, Charleroi, from blame in the causation of the death of John Almosi, who was struck and fatally injured by the physician's car recently, was returned by the coroner's jury, November 8.

### Philadelphia

**Medical College Buys Building.**—Jefferson Medical College has purchased for $12,000 a three-story brick building adjoining the Jefferson College Institute of Anatomy.

**Medical Staff Banqueted.**—The annual meeting of the medical staff of St. Mary's Hospital was held November 19. At the banquet which followed the meeting Dr. Ellwood R. Kirby acted as toastmaster and short addresses were delivered touching on the improvements to be made at the institution early next year at a cost of $225,000.

### SOUTH DAKOTA

**Personal.**—Dr. H. T. Ground, Aberdeen, has been appointed a member of the staff of the State Hospital for the Insane, St. Peter, Minn.——Dr. and Mrs. E. B. Taylor, Huron, sailed for Europe, November 1.

**New Hospitals.**—The new Peabody Hospital, Webster, was formally opened October 18. The building is 36 by 56 feet, and two stories and a basement in height, and has accommodation for sixteen patients.——Mitchell has been selected as the location of the new Methodist Hospital.

**New Officers.**—Black Hills Medical Association in Deadwood, November 6: president, Dr. F. E. Ashcroft, Deadwood; secretary-treasurer, Dr. F. W. Minty, Rapid City.——Third District Medical Association at Aberdeen: president, Dr. N. K. Hopkins, Arlington; secretary-treasurer, Dr. L. N. Grosvenor, Huron.

### TEXAS

**Association Changes Name.**—The Texas Antituberculosis Association will hereafter be known as the Texas Public Health Association.

**Academy of Medicine Organized.**—The San Antonio Academy of Medicine was organized November 10, and the following officers were elected: president, Dr. C. A. R. Campbell; vice-presidents, Drs. J. W. Carhart and F. Hadra, and secretary-treasurer, Dr. R. A. Roberts.

**New Officers.**—Fifth District Medical Society at San Antonio, November 6; president, Dr. William Myers, Seguin; secretary, Dr. J. A. McIntosh, San Antonio (reelected).——Fourth District (San Angelo) Medical Association at Lampasas, October 28 and 29: president, Dr. J. W. Ellis, Lampasas; secretary-treasurer, Dr. J. M. Horn, Brownwood (reelected). Ballinger was selected as the next place of meeting——Sixth District Medical Association at Corpus Christi, October 14: president, Dr. F. G. Painter, Corpus Christi; secretary-treasurer, Dr. L. J. Manhoff, Port Aransas.

**Personal.**—Dr. R. L. Vineyard, Amarillo, has been appointed house physician at the Santa Fe General Hospital, Temple.——Dr. and Mrs. H. A. Logsdon, Forth Worth, entertained the Phi Chi Medical Fraternity of Texas University, November 3.——Dr. J. P. Simonds, professor of preventive medicine in the State University, Galveston, has been appointed assistant professor of pathology in the medical department of Northwestern University, Chicago.——Dr. and Mrs. G. A. Wedemeyer, Taylor, have returned from abroad.——Dr. Milton W. McMurray suffered a fracture of two ribs and a severe sprain of the ankle in a collision between his automobile and a Frisco passenger train at Houston, October 29.

### WASHINGTON

**Personal.**—Dr. Jesse Wilbur Calkins, Seattle, has gone to Europe for three years' study.——Dr. J. M. Semple, superintendent of the Eastern Washington Hospital for the Insane, Medical Lake, has resigned to take effect November 9.

**Silver Jubilee of Society.**—The King County Medical Society celebrated its silver jubilee at Seattle with a banquet at the Arctic Club over which Dr. Arthur E. Burns presided as toastmaster. Ten of the charter members of the association were present.

**Anatomical Club Incorporated.**—Eleven physicians of Seattle have incorporated an anatomical club for the purpose of carrying on studies in surgical anatomy. The association has an arrangement with the county commissioners of King County by which the bodies of paupers will be furnished for dissection.

**New State Board Members.**—Governor Lister on November 15 announced the appointment of a new board of medical examiners. From the regular school Drs. Robert Percy Smith and Andrew J. Nelson, Seattle; Royal A. Gove, Tacoma; Jesse J. Tilton, Toppenish, and Conrad N. Suttner, Walla Walla, were appointed. Drs. James A. MacLachlan, Dayton, and Elmer D. Olmsted, Spokane, are representatives of the homeopathic school, and J. R. Walker, Sunnyside, and J. E. Hodgson, Spokane, are the osteopathic members of the board.

### WEST VIRGINIA

**Hospital Incorporated.**—The Beckley Hospital and Nurses' Training School, with accommodations for thirty patients, has been incorporated by Drs. James E. Coleman, Fayetteville, and Robert Wriston, Beckley, with a capital stock of $25,000.

**Physicians of Four Counties Meet.**—At the annual meeting of the Grant, Hampshire, Hardy and Mineral Counties Medical Society, held in Piedmont, October 16, the following officers were elected: president. Dr. Zadock T. Kalbaugh, Piedmont; secretary-treasurer, Dr. W. Holmes Yeakley, Keyser (reelected).

**Instruction of Health Officers.**—In accordance with the provisions of the county medical practice law, the State Board of Health held a meeting in Parkersburg, November 28, devoted to the instruction of county and municipal health officers in the region adjacent to Parkersburg. In the evening a public meeting was held at which Dr. A. B. Frost, U.S.P.H S., Governor Hatfield, and the president and secretary of the state board made addresses on subjects pertaining to health affairs.

**Personal.**—Dr. Joseph M. Houston, Elm Grove, was painfully injured by a fall from a horse November 10.——Dr. L. A. Davidson, West Milford, is ill and under treatment at the State Hospital, Weston.——Dr. Jonathan Edward Burns, Wheeling, has returned from Europe.——Dr. Lewis V. G. Guthrie, Huntington, has been reappointed superintendent of the West Virginia State Hospital, Huntington.——Dr. Robert A. Ashworth, Richwood, has been appointed official physician for the State Penitentiary, Moundsville, vice Dr. J. C. Peck, resigned.——Dr. John W. Gilmore, Wheeling, has been appointed a member of the medical board of the View Point Sanitarium and Ohio County Antituberculosis Dispensary, vice Dr. Thurman Gillespy.

### GENERAL

**Meeting of Alton Surgeons.**—At the annual meeting of the Chicago and Alton Railway Association of Surgeons held in Chicago, November 8, Dr. H. C. Fairbrother, East St. Louis, was selected president and Dr. J. W. Dreyfus, Louisiana, Mo., vice-president.

**Soo Line Surgeons to Meet.**—The seventh annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association will be held in Milwaukee December 4 and 5. Governor McGovern of Wisconsin will deliver an address on "The Workman's Compensation Act."

**Personal.**—Dr. A. E. Spaulding, Luverne, president of the Minnesota State Medical Association, has been elected president of the Rock Island Railway Surgeons' Association.——Dr. Henry M. Bracken, St. Paul, secretary of the Minnesota State Board of Health, has been elected president of the Minnesota School Hygiene Association.——Drs. Homer J. Hall, Franklin, Ind., has been elected a vice-president of the National Council of One-Hundred, a reform organization connected with the

Anti-Saloon League, and Dr. Thomas D. Crothers, Hartford, was elected a member of the council.

**Appropriation for Scientific Research.**—The trustees of the American Medical Association have made a new appropriation for the Committee on Scientific Research. The committee has decided to use this money as far as possible to promote work in medical research where suitable conditions exist but where such work suffers for the lack of relatively small sums of money. Applications for grants are invited and may be sent to any member of the committee, which consists of L. Hektoen, 1743 West Harrison Street, Chicago; S. Flexner, Rockefeller Institute for Medical Research, New York, and William Litterer, Vanderbilt University, Nashville, Tenn.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Mount Sinai Hospital, New York City, $100,000, one-half of the income to be used for the department of nervous diseases, and the remainder for the general purposes of the hospital; St Luke's Hospital, German Hospital and Dispensary, New York Eye and Ear Infirmary and Lincoln Hospital and Home, each $25,000 by the will of Benjamin Altman.

New York Post Graduate School and Hospital, $2,000 by the will of Mrs Mary L Parsons

Beth Israel Hospital, New York City, $5,000; Mount Sinai Hospital, $2,500; Lebanon Hospital and the Montefiore Home, each $1,500; Hospital for Deformities and Joint Diseases, Har Moriah and the National Jewish Hospital, Denver, each $1,000.

Mount Sinai Hospital, New York, German Hospital and the Montefiore Home each $2,500 by the will of Max E Bernheim

South Bend Visiting Nurses' Association, a donation of $5,000 by Mrs George W Wyman

Boston Medical Library, $86,800 by the will of Mrs. Ellen B Wyman, Newburyport, Mass., to be known as the Samuel Wheeler Wyman Memorial Fund

Charity Hospital, New Orleans, $20,000 by the will of Mrs Tilton, a donation of $1,000 from the estate of Edward Rosenberg, a second payment of equal amount to be paid Oct 1, 1914.

**Army Medical Corps Examinations.**—The surgeon general of the Army announces that preliminary examinations for appointment of first lieutenants in the Army Medical Corps will be held on Jan. 19, 1914, at points to be hereafter designated. Full information concerning these examinations can be procured on application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits and shall have had at least one year's hospital training as an intern, after graduation The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible In order to perfect all necessary arrangements for the examinations, applications must be completed and in possession of the adjutant general at least three weeks before the date of examination Early attention is therefore enjoined on all intending applicants. There are at present twenty-six vacancies in the medical corps of the Army.

## CANADA

**New Hospital.**—A new fifty-room hospital is to be erected at Walkerville, Ont, at a cost of $50,000.

**New Officers.**—Vancouver Medical Association: president, Dr. J. W. McIntosh; vice-president, Dr. W. D. Keith; secretary-treasurer, Dr. A. B. Schinbein. At the meeting November 10, Dr. Peter H. Bryce, medical officer, Department of the Interior, Ottawa, delivered an address on "The True Physician as Sociologist."

**Dissatisfaction with Examination of Schoolchildren.**—Several school trustees of the board of education, Toronto, are dissatisfied with the medical inspection of schoolchildren as carried out at present by the board of education, and will back the city council in its appeal to the Ontario government for special legislation to have the inspection done under the health department of the city.

**Personals.**—Dr. Charles A. Webster, graduate of Knox College, Toronto, and now professor of anatomy at Beirut, Syria, has terminated his furlough in Toronto and has returned to his duties in the foreign mission field of the Presbyterian Church of Canada.——Sir Arbuthnot Lane returning from Chicago, spent a day in Toronto and inspected the new General Hospital and the Wellesley private hospital Sir Arbuthnot considers the Toronto General Hospital the best he has ever seen. He visited Ottawa November 22, and sailed from Montreal for England November 29.

**Medical Inspection of Schools in British Columbia.**—The Committee on the Medical Inspection of Schools of the Canadian Medical Association at the annual meeting in London last June, reported that medical inspection of schools was further advanced in the province of British Columbia than in any other province in Canada. Dr. C. J. Fagan, secretary of the Board of Health of that province, has just reported to the provincial secretary on this work for the year ended June 30 This work has been prosecuted since 1911, has made considerable progress and is now well organized throughout that province. The whole work is under the supervision and charge of the provincial board of health and the medical inspectors in the unorganized districts are paid by that board. The work done in the cities of Victoria, New Westminster, Vancouver and South Vancouver has been excellent. When the tabulated report is inspected it is seen that there is a great number of scrofulous conditions present in the pupils. Twenty per cent. of all children reveal some sign of tuberculosis. Dr. Fagan urges the establishment of outdoor classes and outdoor schools and argues that the principle of the preventorium or open-air school should be extended so as to include all schools. In nearly all schools the teachers have heartily cooperated in the work. A report on 29,774 children shows that 16,774 are unvaccinated. All told 37,591 pupils were examined, enlarged tonsils and defective teeth giving the largest numbers: for the former, 5,302; for the latter, 12,644.

## LONDON LETTER

*(From Our Regular Correspondent)*

LONDON, Nov. 8, 1913.

### Nostrums in Australia

An address read before the Queensland branch of the British Medical Association by Dr. David Rosenburg contains some interesting information on the nostrum problem at the antipodes. In 1905 an act was passed which compelled a proper trade description of imports, including foodstuffs and patent medicines, but no restrictions were imposed with regard to articles produced in the commonwealth As a result the following ridiculous situation has arisen: A preparation was imported which was known to be harmful but which bore a misleading label stating that it was harmless, especially to children. Under the commerce act the importers were called on to amend the statements. Instead of doing so they imported the substance in bulk and printing the labels in Australia, packed and labeled the medicine in the old way and so its sale was unaffected. The customs department has prevented the importation of (1) "cure-alls" with extravagant claims and absurd prices; (2) spirits claiming vast medicinal benefits, and (3) preventives to conception. A cancer cure which was prohibited by the customs is now being made in Victoria and freely sold. "Radam's Microbe Killer" was objected to because its label declared: "It is a positive and certain cure for all diseases and is guaranteed to be perfectly harmless. It will effect a cure in every instance if given a fair trial. It is perfectly harmless, and can be taken in any quantity without danger." Dr. Rosenburg quoted the fact that analysis by the American Medical Association showed that it contained hydrochloric acid, sulphuric acid and red wine. Its importation was prohibited, with what result? It is now being made in Victoria, and the federal government has no power over the advertisements or manufacture The following are some other examples of articles, the importation of which was prohibited but which are now freely made and sold in the commonwealth: Blair's gout and rheumatic pills were prohibited because they falsely claimed to affect psoriasis and eczema, which they alleged were gouty skin affections The label of "Wioletta Hair Tonic" was objected to by the customs. In the Australasian it is advertised thus: "I'm the absolute cure for baldness." Indian Root Pills and Doan's Backache Pills, "a specific for diabetes, congestion of the kidneys, inflammation of the bladder," are being imported in bulk, and after leaving the customs are packed in Australia, and the commonwealth government has no power over them Under the commerce act the claims for medicinal benefit from alcohol are not allowed on importation. The following are some specimens of the advertisements of articles manufactured in the commonwealth: "White Horse Whiskey"—"heart tonic" Wolfe's Schnapps—"a standard tonic," and, again, "A stimulant that is medicinal in its action. and is a direct health promoter, worthy of all men drinking It has curative effect in kidney, bowel, and urinary affections" "Wincarnis," 21.4 per cent. proof spirit "Vigorous vitality and sturdy strength."

### Natives in the Medical Service of the Indian Army

In my last letter the effect of the recent throwing open of civil medical appointments in India to local practitioners, usually natives, was discussed. The medical service of the Indian Army, though open to the natives, has been mainly recruited from the British Isles. The examination is held in London and the appointments have been highly prized because the pay and other emoluments are much better than those in the British Army. The most brilliant of the recently qualified physicians have freely competed for them. The diminution of the emoluments is already producing a serious effect on the number of British candidates. At the last examination twelve vacancies were offered, and five of the successful candidates, including the first three, were Indians. It may be added that all the candidates must have British qualifications. This is not the first time that an Indian has headed the list of successful competitors. Admission to the Indian Medical Service was first thrown open for all duly qualified British subjects in 1853, and at the first competitive examination held under this act an Indian passed with the highest rank. In 1864 he was appointed professor of materia medica in the Calcutta Medical College, a post which he held until his death in 1874. Half a century elapsed before another Indian headed the list. But the obtaining of the first three places by Indians is unprecedented. That this is due not to exceptional merit of the Indian candidates but to diminished competition of the British, is indicated by the fact that the marks obtained in this competition are unusually low. In the last twelve examinations the highest marks obtained by the first man were 4,120 and the lowest 3,447. Only once have the numbers been less than on the present occasion (3,517). The marks of the twelfth man have varied from 3,554 to 2,958, whereas in the last examination they were only 2,878.

### Sugar as a Butter Preservative

An unsuccessful prosecution was brought against a Liverpool firm on the charge of selling butter containing sugar. The prosecution claimed that the 1.2 per cent. of sugar present was a foreign ingredient. According to the law sugar could be used as a preservative; but as the quantity here present was not sufficient, it must be regarded as a foreign substance. The defendant stated that sugar was put in because the public liked a mild sort of butter. The magistrate dismissed the charge as he thought the act contemplated the presence of other preservatives besides salt.

### Royal Commission on Venereal Diseases

The king has approved of the appointment of a royal commission to inquire into the subject of venereal diseases in the United Kingdom, their effects on the health of the community, and the means by which these effects can be alleviated or prevented, it being understood that no return to the policy or provisions of the contagious diseases acts is to be regarded as falling within the scope of the inquiry. These acts provided for the compulsory examination and detention of prostitutes. The public feeling aroused against them grew so much that their reintroduction in any form is out of the question. As stated in previous letters to The Journal, the appointment of this commission may be traced to the resolution passed at the International Medical Congress. It is composed of prominent public men and women, clergymen and a number of medical specialists (Sir Malcolm Morris, Sir John Collie, Dr. Mott, Mr. Ernest Lane and Mrs. Scharlieb). For a long time attempts have been made to induce the government to appoint this commission. In 1899 memorials were presented to Lord Salisbury (then prime minister) by the royal colleges of surgeons of England and Ireland and the British Medical Association, but the breaking out of the Boer War caused the subject to be shelved. In the same year the International Congress on Venereal Diseases was held at Brussels and resolutions were passed urging the various governments to appoint commissions of inquiry. The congress declared definitely against anything in the nature of the contagious diseases acts. Next a discussion on the subject took place at the Royal Society of Medicine in 1912. In June of this year Sir Malcolm Morris published an article in the *Lancet*, which received editorial support, asking for the appointment of a royal commission and drawing attention to the grave dangers of venereal disease being contracted innocently. Later a letter was published in the *Morning Post* asking for the appointment of a royal commission, signed by the presidents of the royal colleges of physicians and surgeons, the professors of medicine in the universities, and the presidents of the medical societies. This letter was endorsed by the representative meeting of the British Medical Association. A remarkable feature of the situation is the open manner in which the lay press has discussed the problem of venereal disease. During the meetings of the congress columns of the leading journals, the *Times* and *Morning Post* in particular, were devoted to discussions on syphilis. A few years ago these journals would scarcely dare to print the word and would use some periphrasis such as "a certain contagious disease."

## PARIS LETTER

*(From Our Regular Correspondent)*

Paris, Nov. 7, 1913.

### Action of Chlorids on Calomel

It is customary to warn patients who have taken calomel to refrain from salt or salted foods for some hours at least, after the medicine has been taken. Occasional complications which follow the taking of calomel have for a long time raised the question of a possible decomposition of calomel, with the formation of corrosive sublimate, in the presence of the sodium chlorids in foods. The question of the incompatibility of calomel and of table salt has been studied again recently. Dr. Patein, head pharmacist at the Lariboisière hospital, recently reported before the Académie de médecine the results of his experiments, which show that practically calomel is transformed into the sublimate by chlorids and lactates of sodium and ammonium, preformed or not, only when these salts are neutral. Decomposition begins only when the medium becomes alkaline. Sodium chlorid has the property of protecting calomel against the decomposing action of sodium carbonate. The purgative action of calomel cannot be attributed to its partial decomposition in the stomach. Patein found that dogs which had taken calomel mixed with salt showed no symptom of intoxication.

### The Red-Cross Emblem

A recent decree fixed the conditions under which the red cross on white field or the words "red cross" or "Geneva cross" may be employed when, under exceptional conditions, their commercial use is authorized. According to this decree, goods made by private persons may bear these emblems or words on the packages or wrappers only on condition that they have been manufactured on commission for public use in the army or navy or for societies officially authorized to give aid to the sanitary service of the army or for associations which are officially authorized to give aid to the wounded, the sick or the shipwrecked and which have hospital buildings provided with an official commission.

### Hygiene Among Barbers

At the last session of the Société de prophylaxie sanitaire et morale, Dr. Charles Fouquet, who had been commissioned to report on methods of diminishing the danger of infection from barbers, made the following recommendations, which are to be submitted to the barbers' organization: (1) that customers known to be sick or apparently sick should supply their own implements; (2) that the barber should wash his hands with soap and water before waiting on a customer; (3) that only clean and sterilized instruments should be used. It must be admitted that the first of these demands is unreasonable, since the barber cannot be expected to have this knowledge. For the cleaning and sterilizing of the instruments the following are the rules to be recommended: Edged tools should be washed in a 1 per cent. solution of sodium carbonate and dried; hair-brushes, shaving-brushes and combs should be cleaned every evening with water, soap and ammonia; metallic instruments should be passed through the flame; basins and shaving-brushes should be immersed in boiling water each time used; brushes and combs should be kept hermetically closed in a compartment in which stands an uncovered saucer containing a 40 per cent. dilution of liquor formaldehydi; the powder-puff should be replaced by a pad which should be thrown away after use, or by a shaker; rock alum should also be replaced by powdered alum applied with a pad; also the barber should not whet the razor on the palm of the hand.

### Organization for English-Speaking Students

A Britannic section of the Université de Paris has been founded at the Sorbonne by English-speaking students. It is intended to facilitate relations between its members and English and American men and women who are interested in the intellectual affairs of France. Foreign students from English-speaking countries are admitted on the same footing as French students. The annual fee is 4 francs (80 cents).

## Marriages

Edward Eames Holman, M.D., Pine River, Minn., to Miss Mary E. Corey of Terre Haute, Ind., at St. Paul, Minn., October 28.

William Stanley Timblin, M.D., Chicago, to Miss Frances Ray Goldsworthy of Windsor Park, Chicago, November 22.

Clyde Watkins Jump, M.D., Bozeman, Mont., to Miss Belle B. Pierce of Townsend, Mont., at Helena, November 5.

Michael Penn Cummings, M.D., Reidsville, N. C., to Miss Besse Ray Grove of Philadelphia, November 12.

George Tilman Banker, M.D., to Miss Katharine deWolfe Marble, both of Elizabeth, N. J., November 15.

Theodore Alan Willis, M.D., Clear Lake, Ia., to Miss Clara Marian Hammer of Harlan, Ia., November 4.

Rabun Thomas Wilson, M.D., Houston, Tex., to Miss Metta Inez Andrews of Abilene, Tex., November 5.

Francis Palmer Richards, M.D., to Miss Mildred Edith Burnett, both of Mackay, Idaho, October 23.

Thomas Francis Leen, M.D., to Miss Anna Jones Malley, both of Boston, at Brookline, November 11.

Harry Merton Page, M.D., Ashford, Wash., to Miss Amelia Johnson of Kelso, Wash., October 19.

Eugene A. MacCornack, M.D., Chicago, to Miss Harriet L. Hiebner of Glencoe, Ill., September 5.

Harvey P. Matthews, M.D., to Miss Emma L. Grennell, both of Brooklyn, November 11.

Joseph D. Ely, M.D., Hudson, Mich., to Mrs. Ellen Van Buskirk of Fayette, O., November 8.

Harper Lane Proctor, M.D., to Miss Sara Maude Gross, both of Jacksonville, Fla.

W. H. Grainger, M.D., to Miss Jessie Costa, both of East Boston, November 12.

## Deaths

**John T. McAnally, M.D.** Northwestern University Medical School, 1883; a Fellow of the American Medical Association; of Carbondale, Ill.; formerly mayor of that city; for two terms a member of the Illinois State Board of Charities; at one time president of the Illinois State Medical Society, councilor of the Ninth Illinois District, and a member of the House of Delegates of the American Medical Association; one of the best known practitioners of Southern Illinois; died in the Presbyterian Hospital, Chicago, November 19, aged 65.

**John Brown Gaston, M.D.** University of Pennsylvania, Philadelphia, 1855; a member of the Medical Association of the State of Alabama; surgeon of the Nineteenth Alabama Regiment, C.S.A., and later division surgeon during the Civil War; twice mayor of Montgomery and since 1895 probate judge; a prominent and beloved citizen of Montgomery; died at the home of his son, November 8, aged 79.

**John G. Daniels, M.D.** University of Louisville, Ky., 1877; health officer of Upshur County, Texas; a member and secretary of the Board of Medical Examiners for the Seventh Judicial District of Texas from 1888 to 1901; local surgeon of the St. Louis and Southwestern Railway since 1883; died at his home in Gilmer, October 30, aged 60.

**William Royal Engel, M.D.** Jefferson Medical College, 1906; formerly physician in charge of the Thermal Belt Sanatorium, Tryon, N. C., and of the North Carolina Tuberculosis Sanatorium, Montrose, and since 1911 a practitioner of Charlotte, N. C.; died at his old home in Tryon, October 28, from tuberculosis, aged 35.

**Rudolph Clarence Mollman, M.D.** University of Pennsylvania, Philadelphia, 1900; of Reading, Pa.; died at Longport, Atlantic City, N. J., November 5, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, while despondent on account of ill health, aged 37.

**C. W. Theodore H. Buehring, M.D.** University of Göttingen, Germany, 1892; formerly of Nordheim, Texas; local surgeon of the San Antonio and Aransas Pass Railroad; a member of the American Association of Life Insurance Examining Surgeons; died at his home in Lockhart, Texas, November 4, aged 39.

**Gurley Davis Moose, M.D.** University of Maryland, Baltimore, 1907; of Mount Pleasant, N. C.; a Fellow of the American Medical Association; who contracted tuberculosis while an intern in Johns Hopkins Hospital; died from that disease in a hospital in Asheville, N. C., November 7, aged 30.

**Thomas James, Jr., M.D.** Hospital College of Medicine, Louisville, 1901; was found dead in his office in Louisville, October 22, from the effects of a bullet wound of the right temple, believed to have been self-inflicted with suicidal intent, while despondent on account of ill health, aged 35.

**Allen M. Hall,** Pennsylvania University, Lexington, Ky., 1848; chief surgeon of the Eighth Tennessee Infantry, C.S.A., during the Civil War; a practitioner of Sumner and Shelby counties, Tenn., for many years; died at the home of his daughter in Memphis, October 28, aged 90.

**Samuel B. Mills, M.D.** University of Louisville, 1852; for several years teacher of physiology and hygiene in the Louisville schools; at one time a member of the Board of Health; died at the home of his daughter in Fostoria, Louisville, October 24, from senile debility, aged 85.

**Thomas Constantine Finnell, M.D.** New York University, New York City, 1880; acting assistant surgeon, U. S. Army, during the Spanish-American War; physician for the Board of Health and Board of Education, New York City; died suddenly, November 6, aged 54.

**Fred J. Peterson, M.D.** California Eclectic Medical College, Los Angeles, 1900; died at his home in Camp Meeker, Cal., September 9, from the effects of a gunshot wound believed to have been self-inflicted with suicidal intent, while despondent on account of ill health.

**George W. Campbell, M.D.** College of Medicine of Southern California, Los Angeles, 1889; formerly a member of the city council of Los Angeles and coroner of Los Angeles County; a pioneer of Boyle Heights; died in the Clara Barton Hospital, Los Angeles, October 27.

**William Lloyd Richards, M.D.** University of Pennsylvania, Philadelphia, 1896; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; died at his home in Wilkes-Barre, November 6, aged 39.

**Philip T. O'Brien, M.D.** Albany (N. Y.) Medical College, 1872; for several years a member of the board of selectmen and the town school committee of Plymouth, Mass.; died at his home in Plymouth, October 31, from cerebral hemorrhage, aged 64.

**George Alton Kennedy, M.D.** University of Toronto, Ont., 1878; of Macleod, Alta.; surgeon-captain in the Northwest Mounted Police and local surgeon of the Canadian Pacific System; died in the Winnipeg General Hospital, October 8, aged 55.

**Rudolph Ravenburg, M.D.** George Washington University, Washington, D. C., 1874; a veteran of the Civil War; for half a century an employee of the War Department, Washington, D. C.; died in his apartment in that city, October 23, aged 81.

**Thomas Benjamin Amiss, M.D.** University of Pennsylvania, Philadelphia, 1861; a member of the Medical Society of Virginia and a surgeon in the Confederate service throughout the Civil War; died at his home in Luray, November 9, aged 74.

**John Palmer Birch, M.D.** Hahnemann Medical College, Philadelphia, 1870; for several years a member of the West Philadelphia School Board; died in the Hahnemann Hospital, Philadelphia, October 31, after a surgical operation, aged 81.

**David K. Stringer, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1880; a practitioner of Grundy and Sullivan counties for forty-six years; died at the home of his daughter in Trenton, Mo., November 11, from cirrhosis of the liver.

**Elizabeth G. Pyrum-Perry, M.D.** Eclectic Medical College of the City of New York, 1882; a practitioner of New York City until 1892 and thereafter a resident of Fryeburg Center, Me.; died in that place, November 7, from pneumonia, aged 93.

**Walter Lowry Williams, M.D.** New York University, New York City, 1872; a member of the Medical Society of the State of Pennsylvania; local surgeon for the Pennsylvania System at Ridgway; died at his home, November 8, aged 69.

**Bennie Castleman, M.D.** University of Nashville, 1910; of Gladeville, Tenn.; died in St. Thomas' Hospital, Nashville, October 1, six days after an operation for appendicitis, aged 33.

**Charles Edward Feller, M.D.** Rush Medical College, 1885; of St. Paul, Minn.; died in St. Joseph's Hospital in that city, October 31, from stricture of the esophagus, aged 58.

**John Tidwell Nethery, M.D.** Vanderbilt University, Nashville, Tenn., 1891; a practitioner of Gibson County, Tenn., for more than thirty years; died at his home in Caruthersville, Mo., October 23, from cerebral hemorrhage, aged 61.

**Daniel D. Kreider, M.D.** Medico-Chirurgical College, Philadelphia, 1911; a Fellow of the American Medical Association and president of the Board of Health of Mount Holly Springs, Pa.; died at his home, November 7, aged 30.

**Thomas E. Casterline** (license, Nebraska, 1891); a practitioner for more than forty-five years; a veteran of the Civil War; one of the proprietors of the Edgar *Sun*; died at his home in Edgar, Neb., October 21, aged 87.

**Wilson A. Long, M.D.** College of Physicians and Surgeons, Baltimore, 1882; of Frederick; a member of the Medical and Chirurgical Faculty of Maryland; died in St. Agnes' Hospital, Baltimore, November 7, from pneumonia.

**James Fleming McCarrell** (license, Washington County, Pa, 1881, Allegheny County, Pa., 1890); a practitioner since 1868; died at the home of his brother in Dinsmore, October 31, from pneumonia following a fall, aged 81.

**Harry A. Smith, M.D.** University of Southern California, Los Angeles, 1894; for some time physician at the Whittier State School; died in his office in Los Angeles, November 2, from internal hemorrhage, aged 40.

**Bryant Hopkins Nowlin, M.D.** Bellevue Hospital Medical College, 1873; Louisville Medical College, 1886; a Confederate veteran; of Iola, Texas; died at the home of his daughter in Teague, Texas, August 9, aged 72.

**George Thomas Mason, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1892; of Mount Pleasant, Iowa; for two terms auditor of Henry County; died at his home, November 4, aged 62, from nephritis.

**Samuel Bell Bunch, M.D.** University of Nashville, Tenn., 1889; of New Roe, Ky.; was found dead near his home October 26, from the effects of an accidental gunshot wound of the chest, aged 59.

**John H. Howard** (license, Tennessee, 1899); in practice for more than fifty years; a Confederate veteran; died at his home in Lexington, September 7, from hemorrhage of the stomach, aged 81.

**Edward C. Lemen, M.D.** Washington University, St. Louis, 1868; for forty years a practitioner of Alton, Ill.; a veteran of the Civil War; died in a sanatorium in Jacksonville, November 9, aged 72.

**D. D. Potter, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1883; of Seward, Neb.; died at the home of his brother in Mount Hope, Kan., November 4, from tuberculosis.

**Durand Hatch Albright, M.D.** Jefferson Medical College, 1851; one of the oldest practitioners of Alamance County, N. C.; died at his home near Snow Camp, November 3, from cerebral hemorrhage.

**Charles Edgar Wilson, M.D.** Medical School of Maine, Brunswick, 1885; a member of the Maine Medical Association; died at his home in East Hiram, November 4, from heart disease, aged 60.

**Samuel Augustus Marlin, M.D.** Western Pennsylvania Medical College, Pittsburgh, 1894; of Clinton, Pa.; was killed in an automobile accident near Stoop's Ferry, Pa., October 23, aged 50.

**Daniel A. Arter** (license, Westmoreland County, Pa., twenty years' practice, 1881); a practitioner since 1850; died at his home in Canton, Ohio, November 5, from senile debility, aged 85.

**James C. Johnson, M.D.** Atlanta (Ga.) Medical College, 1859; for many years a practitioner of Macon, Ga.; died at his home in Vineville, November 1, from senile debility, aged 75.

**James S. Baugh, M.D.** Trinity Medical College, Toronto, Ont., 1881; medallist of his class; died suddenly at his home in Hamilton, Ont, October 18, from heart disease, aged 63.

**John Kuestner, M.D.** Hahnemann Medical College, Philadelphia, 1887; of Philadelphia; died in the Pennsylvania Hospital for the Insane, October 20, from strangulation by food.

**Frank Marion Davis, M.D.** Ohio Medical University, Columbus, 1901; a Fellow of the American Medical Association; died at his home in Pittsburgh, November 7, aged 44.

**Charles Lingham Cunningham** (license, Maryland); a practitioner for more than twenty-five years; died at his home in Cresaptown, October 22, from nephritis, aged 51.

**George W. Armentrout, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1899; died at his home in Letts, Iowa, November 2, from heart disease, aged 50.

**Ivan Annett, M.D.** Western University, London, Ont., 1911; of Windsor, Ont.; died in Victoria Hospital, London, Ont., October 5, after a surgical operation, aged 23.

**Camillus B. Faulconer, M.D.** St. Louis Medical College 1865; a physician and capitalist of Montgomery, Mo.; died at his home, August 31, from nephritis, aged 78.

**William W. Hill, M.D.** Toledo (Ohio) Medical College, 1883; a veteran of the Civil War; died at his home in Weston, Ohio, October 17, from arteriosclerosis, aged 66.

**William A. Hawk, M.D.** Jefferson Medical College, 1880; a physician and pharmacist of Tower City, Pa.; died at his home, October 24, from heart disease, aged 50.

**Edward Horan, M.D.** Queen's University, Belfast, Ireland, 1880; of San Francisco; died in Trinity Hospital in that city, October 25, from pneumonia, aged 59.

**James B. Crucial** (license, years of practice, North Dakota); known as James Buchanan Cross; died in the Cass County Hospital, Fargo, October 30, aged 84.

**Thomas D. Gamble, M.D.** Washington University, St. Louis, 1858; of Wheatland, Iowa; died at the home of his daughter in that place, November 7, aged 83.

**John Martin Cameron, M.D.** Victoria University, Coburg, Ont., 1887; formerly of Thessalon, Ont.; died at his home in North Yakima, Wash., October 29.

**A. E. Smith, M.D.** Starling Medical College, Columbus, O., 1883; of Bracken County, Ky.; died at the home of his aunt in Cincinnati, October 14, aged 56.

**Peter Fisher** (license, years of practice, Illinois, 1878); for fifty years a practitioner; died at his home in Edwardsville, October 29, from uremia, aged 74.

**Francis M. Cullum** (license, Arkansas, 1908); an eclectic practitioner of Hartman; fell into a well at his home, November 3, and was drowned, aged 50.

**Neill Monroe Culbreth, M.D.** University of Tennessee, Nashville, 1882; died at his home in Wilmington, N. C., September 1, from spinal disease, aged 63.

**Leonadus A. Rutherford, M.D.** Eclectic Medical College of the City of New York, 1877; died at his home in Kinston, N. C., October 23, aged 63.

**David O. Munsey, M.D.** Medical College of Ohio, Cincinnati, 1878; a veteran of the Civil War; died at his home in Gaston, Ind., October 30, aged 68.

**Allan B. Carscallen, M.D.** Queen's University, Kingston, Ont., 1875; died at his home in Enterprise, Ont., recently from cerebral hemorrhage.

**Arthur Harris Davis, M.D.** University of Nashville, Tenn., 1879; died at his home in Little Rock, August 27, from heart disease, aged 53.

**William Lafayette Abernethy, M.D.** Kentucky School of Medicine, Louisville, 1877; died at his home in Hickory, N. C., in August.

**William Frank Minard, M.D.** Hahnemann Medical College, Philadelphia, 1887; of Waterbury, Vt.; died in Boston, October 9, aged 46.

**Franklin Slocum** (license, Michigan, 1900); a practitioner since 1858; died at his home in Ludington, September 6, aged 73.

**Sidney A. Pierce, M.D.** University of Pennsylvania, Philadelphia, 1868; died at his home in Rochester, N. Y., August 24, aged 68.

**Clarence George Clark, M.D.** University of Michigan, Ann Arbor, 1899; died at his home in New York City, November 5, aged 36.

**Charles Anson Munn, M.D.**, New York University, New York City, 1883; died at his home in New York City, September 27.

**William F. Sharp, M.D.** Missouri Medical College, St. Louis, 1873; died at his home in Davilla, Tex., October 9, aged 73.

**Thomas Abram Perrin, M.D.** University of Michigan, Ann Arbor, 1873; died at his home in San Jose, Cal., October 6.

**L. C. Presley** (license, Arkansas, 1903); died at his home in Peebe, September 25, aged 74.

**John Milton Homan, M.D.** Harvard Medical School, 1903; died at his home in East Everett, Mass., October 6, aged 37.

**Benjamin C. Jones, M.D.** Missouri Medical College, St. Louis, 1867; died at his home in Poplar Bluff, Mo., October 9, aged 77.

# The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

## PULMONOL

### Another Fraudulent Consumption Cure

"Fifty thousand physicians and all standard text-books endorse every ingredient in Pulmonol." Yes, and a hundred thousand physicians and standard text-books endorse every ingredient in dishwater; soap is good, grease is good, water is good, each in its place; but neither physicians nor any one else recommend dishwater as a cure for consumption. Neither does any physician nor any layman, except he be a fool or a knave, recommend Pulmonol as a cure for consumption.

Pulmonol is put on the market by the Pulmonol Chemical Company, New York City. The Pulmonol Chemical Company seems to be a trade name assumed by one Arthur Vincent Payne, M.D., who terms himself "medical director."

Like all consumption cures, the stuff is pushed by means of lying claims and worthless testimonials. Like every other concern that exploits "cures" for consumption, the Pulmonol Company seems to find it more natural to lie than to tell the truth when describing its panacea. In the advertising pamphlet sent out to boards of health and tuberculosis societies, Arthur V. Payne, M.D., makes this statement:

> "Many eminent and broad-minded physicians prescribe Pulmonol and use it in their private practice as their own product . . ."

Of course this is a falsehood and its author knows it is a falsehood, but apparently he expects to "get away with it." In another booklet the concern says:

> "We spent a year trying to get the doctors to use Pulmonol and finally had to give up the job."

Of the various claims made for this stuff, these are typical:

> "It cleans out the lungs."
> "Stops night sweats."
> "Prevents hemorrhages."
> "Strengthens the heart."
> "Gives strength to resist disease."
> "Cures the most stubborn coughs."

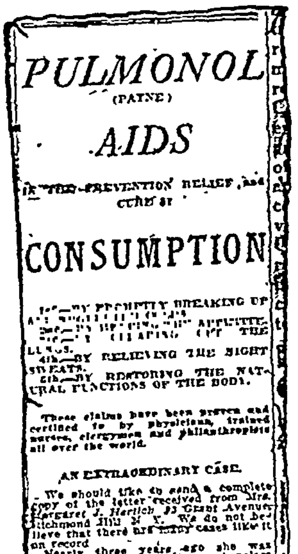
Like some other men in the consumption-cure business, A. V. Payne is shrewd enough to recommend, in his advertising matter, that those taking Pulmonol shall follow the rules laid down by reputable physicians for the treatment of tuberculosis; that, in addition to taking his nostrum, they shall live in the open air as much as possible, eat nourishing food and in other ways follow out the approved method of treating the disease. Such suggestions, coming from "patent medicine" exploiters are worthless, as every physician knows. The one reason, above all others, that causes the consumptive to fly to the quack is his belief, born of ignorance and the optimism that characterizes the disease, that the medicine he buys will relieve him of the necessity of following the strict regimen laid down by his physician.

There is an inborn belief amoung the laity that there is a specific drug for every disease—if the medical profession were only wise enough to discover it. The quack, either inferentially or directly, assures the public that he *has* found the specific; and the public believes him! It is the universal experience of those who have had much to do with consumptives that dietetic and hygienic measures are disregarded in direct proportion to the amount of medicine the sufferer takes. Herein lies the viciousness of the consumption cure. A. V. Payne may smugly "point with pride" to his "literature," in which he urges those who buy his nostrum to follow the rules laid down by scientific men in the treatment of tuberculosis, but he knows, unless he is more fool than knave, which we doubt, that such rules will not be followed, once the victim begins relying on Pulmonol.

#### SOME TESTIMONIALS INVESTIGATED

A few of the testimonials published by the Pulmonol Chemical Company have been investigated with the usual results. The testimonial-givers are, as always, divided into two classes; those who really had tuberculosis and those who did not have it. As we have said many times, it is useless to investigate fresh testimonials. Most of them are written in good faith and not until the cases have progressed further are the victims undeceived as to the efficiency of the nostrum. It is therefore necessary to wait a year or two before looking into testimonials of this class. We then find, invariably, that the consumptive who had relied on the nostrum is dead. This is what has been found in the case of Pulmonol testimonials.

One testimonial published by the Pulmonol concern was featured as an "Extraordinary Case." "We do not believe that there are many cases like it on record," says the booklet, which, after giving the testimonial, suggests that "The Committee on Tuberculosis will find this a most interesting case for its investigation." It will! The poor woman whose case is described therein has been dead for some years, and we have evidence that indicates that the Pulmonol Company continued to publish the testimonial not only after the death of the victim, but after that death had been specificially brought to the attention of A. V. Payne. A nice, ghoulish sort of business!



PULMONOL
(PAYNE)
AIDS
IN THE PREVENTION RELIEF AND CURE OF
CONSUMPTION

1st—BY PROMPTLY BREAKING UP [illegible]
2nd—BY [illegible] APPETITE.
3rd—BY CLEARING OF THE LUNGS.
4th—BY RELIEVING THE NIGHT SWEATS.
5th—BY RESTORING THE NATURAL FUNCTIONS OF THE BODY.

These claims have been proven and certified to by physicians, trained nurses, clergymen and philanthropists all over the world.

AN EXTRAORDINARY CASE.

We should like to send a complete copy of the letter received from Mrs. Margaret J. Herlich, 93 Grant Avenue, Richmond Hill, N. Y. We do not believe that there are many cases like it on record.

Nearly three years ago she was brought from Liberty, N. Y., a hopeless physical wreck. To use her own words as per her letter:

"I came back (from Liberty, N. Y.) more dead than alive. It was impossible for me to walk without assistance. I coughed, had night sweats, no appetite and lost seventy-five pounds. This was my condition after everything possible had been done, as we supposed. My daughter purchased a bottle of Pulmonol, and I commenced to take it that very night. I have taken it ever since, [illegible]

PULMONOL (Payne)
For Sale at All
Riker Drug Stores
Where Booklets Containing Further Information May Be Had

Fig. 1.—Photographic reproduction (reduced) of a typical Pulmonol newspaper advertisement. The woman whose testimonial appears in this advertisement died of consumption months before the advertisement appeared!

Another testimonial, published under the heading, "Unbiased Physician Recommends Pulmonol," was that purporting to come from a Brooklyn physician, who is alleged to have recommended Pulmonol to a tuberculous patient who was so nearly dead "that the priest was called in and the last rites were administered." The man took Pulmonol, says the booklet, "and is still taking it. He is not entirely well, but well enough to be one of the happiest men in Brooklyn." Not so; the poor fellow may be happy, but he is not in Brooklyn. He went the way of all consumptives who have reached the last stages of the disease.

Here are some other cases: Mrs. F. A. C—— testifies that she took seventeen bottles of Pulmonol "and was greatly benefited." This testimonial appears in a booklet entitled, "Fighting the White Plague, or Consumption, with Pulmonol." The inference, naturally, is that Mrs. F. A. C—— had been cured of consumption by the use of Pulmonol. The case was investigated and Mrs. C—— was found to be a strong, robust woman whose case had never been diagnosed as tuberculosis, but who just "knows she had it" because she coughed a great deal! And on such testimony as this is this wretched fraud sold to the consumptive.

In the same booklet Mrs. E. J. S—— says that her husband had "lung trouble." "He took six bottles of Pulmonol and it cured him." Here again, we note that no direct statement is made that the man has been cured of tuberculosis; but the inference is there. Investigation shows that Mr. E. J. S——, who is living and well, never had tuberculosis.

Mr. L. E. F—— also gives a testimonial that, inferentially, gives the impression that Pulmonol has cured him of consumption. Our investigation, however, shows that such is not the case, for poor F—— was one of those who really had tuberculosis. He is now dead.

Mr. S—— is alleged to have testified that he was afflicted with tuberculosis and had "consulted the best physicians." He tried sanatorium treatment, but in spite of all continued to get worse. Finally he "bought a bottle of Pulmonol" and "took the medicine as a joke." As a result he alleges: "I am now relieved of all distressing symptoms and gaining in weight and strength daily—and attending to business." This case was investigated with some care and the physicians under whose treatment he claims to have been at the sanatorium were written to for a history of the case. We found that Mr. S—— died of tuberculosis some time ago.

A testimonial dated from a village of less than 1,300 population and alleged to have been written by a Mrs. A. O. B——, urges "every one suffering with consumption" to take Pulmonol as she had done. A physician who lives and practices in this village was written to regarding this case, the full name of the alleged testimonial writer being given. He replied that, although he had lived in the place more than ten years, he had never heard of such a person.

Mrs. C. D. W—— is another individual whose name is given in the testimonial list. On making inquiries, we discovered that Mrs. W—— did have tuberculosis and still has it. She is not taking Pulmonol at present. Her physician says, "Her health is somewhat better than it was a few years ago," and he adds: "I do not consider her improvement due to Pulmonol."

Mr. L. S——, the Pulmonol concern would have the public believe, was cured of tuberculosis by the use of its nostrum. We find, on looking into the matter, that Mr. S—— had tuberculosis some five years ago and that he went to the state sanatorium for treatment. He returned much better. His family physician writes us that he regards this "as an arrested case, produced by sanatorium treatment."

The same old story: the individuals that really suffered from consumption and relied on the "consumption cure" are dead. Every testimonial for a "consumption cure" that we have investigated—and they number hundreds—brings out the same facts: In those cases in which the individuals are still living, they either did not have consumption, or the arrest of the disease was due to scientific treatment and not to the nostrum for which they had testified.

GUARANTEED BY THE MANUFACTURERS UNDER THE FOOD AND DRUGS ACT JUNE 30, 1906 SERIAL No 5736.

FOR [illegible]

DOSE · One to two teaspoonsful three to four times a day
SEE DIRECTIONS ON BACK OF BOTTLE

PULMONOL CHEMICAL CO.
NEW YORK.

Fig. 2.—The Pulmonol label.

WHAT IS PULMONOL?

Pulmonol has been analyzed in the Association's laboratory and, as is the case with most nostrums, has been found to contain drugs that have been used for years by reputable physicians. And yet Arthur Vincent Payne, M.D., yclept the Pulmonol Chemical Company, has the effrontery to declare that Pulmonol is a prescription that he has perfected after he had "given his entire life to a study of tuberculosis and diseases of the lungs." Essentially, Pulmonol consists of a mixture of benzoate of soda, a guaiacol compound, with a dash of strychnin, dissolved in a mixture of glycerin and water. Here is the chemist's report:

> "Three original bottles of 'Pulmonol' (manufactured by the Pulmonol Chemical Company, New York) were received at the Association's laboratory and subjected to chemical analysis. The bottles contained a red, aqueous liquid, having a bitter taste and a faint odor of benzoic acid. Its specific gravity was 1.088.
>
> "Qualitatively Pulmonol contained potassium, sodium, benzoate, sulphonate, glycerin, guaiacol (or cresol), strychnin and coloring matter. The red coloring matter responded to tests for the dye known as bordeaux. The guaiacol was present in a combined form and its characteristic odor became apparent only after boiling with strong sulphuric acid. The strychnin was probably present as the sulphate, as a very faint trace of sulphate was detected.
>
> "Quantitatively the mixture closely corresponded to the following:

| | | |
|---|---|---|
| Potassium guaiacol sulphonate | 5.7 | per cent. |
| Sodium benzoate | 2.1 | per cent. |
| Strychnin sulphate | 0.008 | per cent. |
| Glycerin | 11.6 | per cent. |
| Water | 77.7 | per cent. |
| Difference | 2.8 | per cent. |

Each fluidounce of Pulmonol is equivalent to approximately 29 grains of potassium guaiacol sulphonate, 10 grains sodium benzoate and 1-24 grain strychnin sulphate.

SUMMARY

To sum up: Pulmonol, exploited as a cure for consumption, is a vicious and wicked fraud. Only physicians know the enormous amount of harm done by men of the A. V. Payne type. Those who are conducting a campaign of public enlightenment on the subject of tuberculosis know how difficult it is to eradicate from the public mind the old, pernicious idea that drugs will cure consumption. Those who are selling fraudulent "consumption cures"—and there are no "consumption cures" of the drug type that are not fraudulent—undo, by their lying claims, in a few minutes the good that it has taken weeks and possibly months to attain.

It is the universal experience of visiting nurses and others who come in daily contact with consumptives that just as soon as the victim begins to rely on a widely advertised "cure," he immediately becomes careless of the safety of others and relaxes those efforts which are necessary if he hopes to overcome the disease. It is but human that such should be the case. The tendency is to follow the line of least resistance. If consumption can be cured by taking something out of a bottle four times a day, why should the sufferer subject himself to the minor inconveniences of the more or less strict regimen laid down by the physician?

Of all mean businesses in the world, there are few, if any, more contemptible, more heartless or more economically vicious, than that carried on by the man who enriches himself at the expense of the life of the unfortunate consumptive. Of all tainted money, none is quite so dirty as the blood-toll collected by the "consumption cure" faker.

# *Correspondence*

## "Red Not a Satisfactory Danger-Signal"

*To the Editor:*—From an editorial with this title (The Journal, Nov. 8, 1913, p. 1724), I quote: "Just why it was selected as a danger-warning is a question for the anthropologist and historian to determine." I am not an anthropologist or a historian, but simply an eye-specialist. There is one very good reason why red has been selected as the danger-signal. Red is the one color, outside of the ordinary white or yellow light, that is seen at a great distance. At sea the first light to be seen on an approaching vessel is her white masthead light, next her port red light, and some time later her starboard green light. The substitution of yellow for one of the colors would be impossible, as it would be confused with every window- and street-light in town. There is no other unmistakable color that can be seen at so great a distance as red. Color-blind persons should not be entrusted with the navigation of ships or the operation of railway-trains.

Frank W. Edmonds, M.D., Berkeley, Cal.

## The Suicide-Rate of San Diego

*To the Editor:*—In the editorial on "Anomalies of Suicide," The Journal, Nov. 8, 1913, p. 1721, the suicide-rate for the city of San Diego, according to the statisticians, is given as "more than 40" per hundred thousand. Calculations are made, of course, on the basis of the census enumeration of 1910, which gives the official population of the city as 39,578. The census here was very poorly taken, and it was notorious that this estimate was far below the population at the time it was taken. Tents were even erected by private citizens to endeavor to obtain the registration of those who had been neglected by the enumerators. The population of the city as estimated by the compilers of the city directory in the different years, and by the number of water consumers, has been estimated by the Board of Health as follows. The city has doubled in population within the last five years owing to its approaching exposition, Jan. 1 to Dec. 31, 1915, and the construction of the railway to Yuma, now under way. Appended to the population numbers are the suicides for the year.

| Year | Suicides | Population |
|---|---|---|
| 1908 | 11 | 42,500 |
| 1909 | 12 | 45,000 |
| *1910* | 9 | 45,000 |
| 1911 | 20 | 55,000 |
| 1912 | 16 | 65,000 |
| 1913 | 23 | 85,000 |

There have been nineteen suicides to October 31, and on this basis twenty-three have been estimated for the year.

Average population for six years, 56,250.

Suicides: total, 91; average, 15.16 per annum.

Rate per hundred thousand, 26.95.

Francis H. Mead, M.D., San Diego, Cal.

## *Queries and Minor Notes*

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### THE HARLOW-HAYHURST BLOOD-STAIN

*To the Editor:*—About two or three years ago there appeared in The Journal an article on the use of a certain blood-stain. This stain consisted of two solutions, one of eosin in methyl alcohol and the other methylene blue in methyl alcohol. The directions were to dip the slide in Solution 1 for twenty seconds and then without washing into Solution 2 for twenty seconds. I used this stain with great satisfaction, but when I had used it up I was unable to procure a fresh supply. Can you furnish me the formula?

J. Bennett Townsend, M.D., Anderson, S. C.

Answer.—Other correspondents have inquired regarding the composition and method of use of this blood-stain. The Harlow stain is discussed by W. P. Harlow in the *American Journal of the Medical Sciences*, 1904, cxxvii, 662, and in The Journal, March 6, 1909, p. 768; while the Hayhurst modification is fully described by E. R. Hayhurst in The Journal, Dec. 4, 1909, p. 1909. For the use of our readers we give, herewith, a brief description of this stain.

*Preparation of Stains:* Dissolve 0.5 gm. of eosin (Grübler's water-soluble) in 50 c.c. of absolute methyl alcohol (Merck's highest purity), and place in a 3-ounce wide-mouthed bottle. Keep bottle tightly stoppered.

Dissolve 0.5 gm. of methylene blue (Ehrlich's medicinal) in 50 c.c. of absolute methyl alcohol and place in a bottle similar to the preceding.

*Technic of Staining:* Prepare smears of the blood on slides or cover-glasses in the usual manner.

Drop the smear, air-dried but without other fixation, into the bottle containing the eosin stain and allow to remain for twenty seconds.

Remove, drain an instant against the mouth of the bottle and drop the smear directly (without washing) into the methylene blue stain for twenty seconds.

Remove, drain as before, wash rapidly to and fro (three or four quick swashes) in a tumbler of water, shake off the excess of water and dry between filter-paper. Examine with the immersion lens.

The properly stained slide should have a pink-red appearance. The carrying over of a small amount of the eosin solution into the methylene blue solution during the staining process seems to prevent deterioration of the stain by age (when the stain is used only every few days), owing to the neutralization of the excess of alkali (in the blue) by the acid eosin solution. If the stain is frequently used, it may need correcting to overcome defects in its staining properties. If the stained smear shows little or no blue coloration, add a drop of 20 per cent. sodium or potassium hydroxid to the stock methylene blue solution; while a drop of glacial acetic acid should be added, provided the stained smear appears too blue (the red cells being purple). In this way the activity of the stain may be kept constantly under control.

Used in this manner and corrected as described, the Harlow-Hayhurst stain is fairly panoptic, and is simple, convenient and dependable for routine blood-work.

### BIOGRAPHIC SKETCHES AND WORKS ON BLOOD-PRESSURE

*To the Editor:*—Please tell me where I may find satisfactory sketches of (1) Koch; (2) Pasteur; (3) Ehrlich, and (4) Jenner; and furnish me a list of the recent more or less comprehensive works on (5) blood-pressure.

M. S. Davie, M.D., Dothan, Ala.

Answer.—The following books and articles may be consulted:

1. Wezel, Karl: Robert Koch, eine biographische Studie, Berlin, August Hirschwald, 1912.
   Ford, W. W.: Life and Work of Robert Koch, *Bull. Johns Hopkins Hosp.*, December, 1911.
   Knopf, S. A.: Robert Koch, the Father of Modern Tuberculosis Science, The Journal, May 6, 1911, p. 1308.
2. Vallery-Radot, René: Life of Pasteur, New York, Doubleday & Page, $2.50.
3. Paul Ehrlich, editorial, The Journal, Feb. 5, 1910, p. 471.
   Corbus, B. A.: A Visit to Ehrlich, correspondence, The Journal Oct. 8, 1910, p. 1305.
4. Article on Jenner, in Masters of Medicine, New York, Longmans, Green & Co., $2.
5. Oliver, George: Blood and Blood-Pressure, Chicago Medical Book Company, $3.
   Nicholson: Blood-Pressure in General Practice, Philadelphia, J. B. Lippincott Company, 1913, $1.50.
   Faught, F. A.: Blood-Pressure from the Clinical Standpoint, Philadelphia, W. B. Saunders, 1913, $3.

### HAINES' SOLUTION

*To the Editor:*—About a year ago last winter we found a formula in The Journal for the sugar test in urine. This test was to be used in place of Fehling's. We have found it more sensitive and more stable than Fehling's, but have lost the formula. Please give the formula.

H. A. Davis, M.D., Dickinson, N. Dak.

Answer.—We believe that the solution referred to is Haines' solution. The composition of this solution is as follows:

| | |
|---|---|
| Copper sulphate | 12 gm. |
| Potassium hydroxid | 45 gm. |
| Glycerin | 90 c.c. |
| Water | q. s. ad 1,000 c.c. |

This forms a clear, transparent, dark-blue liquid. Four or five c.c. are placed in a test-tube and gently boiled. Six drops of the suspected urine are added and the upper portion of the mixture brought to a boil and immediately removed from the flame. If sugar is present an abundant yellow or yellowish-red precipitate is thrown down; if no such precipitate occurs sugar is absent. The precautions to be observed in using this test are never to add at the outside more than 10 drops of urine and not to boil the mixture for more than one or two seconds after the addition of urine.

### TREATMENT OF INDICANURIA

*To the Editor:*—Please answer the following queries:

1. How would you permanently cure a marked indicanuria in a young man which has been persisting for the last five years?
2. Would you resort to the lactic acid bacillus treatment of Metchnikoff?
3. If so, which is the most reliable preparation?
4. What would result if this condition were left untreated?

X. Y. Z., New York.

Answer.—1. The presence of indican in the urine depends on putrefaction in the intestine. The process of putrefaction may be dependent on various factors. Therefore, in order to secure a permanent cure of indicanuria, we must remove the causative factors. For this purpose the bowel should be emptied and regular bowel movements secured. Inflammation of the intestine should be allayed and a diet which does not readily putrefy should be given. The diet should be mainly carbohydrate. The entire exclusion of protein for a short time at the beginning of the treatment may be advisable.

2. It is doubtful if this treatment would do any good, but it might be worth trying.

3. A number of preparations are put on the market by reliable firms, any of which may be depended on if fresh.

There are a number mentioned in New and Nonofficial Remedies. It should be remembered that the administration of lactic acid germs should always be accompanied with carbohydrate food from which the germs can form the necessary lactic food.

4. Many pathologists believe that a considerable number of internal diseases are due to the absorption of poisonous material from the intestine. It is very probable that other poisons than indican are formed in the process of putrefaction, and it is probable that these poisons have much more serious effects than indican or indol.

### BASS AND WATKINS TEST—THE HERMAN-PERUTZ TEST

*To the Editor:*—1. Please describe the Bass and Watkins rapid Widal test.

2. Please give the Herman-Perutz test for syphilis, and state whether it is reliable.

M. B. McCausland, M.D., Imlay City, Mich.

Answer.—1. The Bass and Watkins method is published in text-books on clinical diagnosis. Reference may be made to Webster's "Diagnostic Methods," p. 588.

2. The Herman-Perutz method is described in The Journal, Feb. 18, 1911, p. 547, in an abstract of the original article in the *Medizinische Klinik*, Jan. 8, 1911. In a recent article by J. Kallos (*Deutsch. med. Wchnschr.*, Sept. 25, 1913, p. 1885), the direction is given not to let the mixture of serum and reagent stand more than twenty hours. The test seems to give reactions very similar to those of the Wassermann test, but in secondary syphilis it does not give a positive reaction so frequently. It should be used only as confirmatory to the Wassermann reaction.

### ORGANISM OF WHOOPING-COUGH—FAVORITE METHOD FOR INJECTING SALVARSAN

*To the Editor:*—1. Has a specific organism been isolated for whooping-cough?

2. Which method is most in favor, the intravenous or the intramuscular injection of salvarsan?

P. E. Lineback, M.D., Anaconda, Mont.

Answer.—1. Such an organism was isolated by Bordet and Gengou a few years ago and is known as the Bordet-Gengou bacillus of pertussis. The following references may be consulted:

Bordet: The Microbe of Pertussis, *Brit. Med. Jour.*, Oct. 9, 1909.
Wollstein, M.: Bordet-Gengou Bacillus of Pertussis, *Jour. Exper. Med.*, January, 1909.
Mallory, F. B., and Hornor, A. A.: Pertussis: Histologic Lesion in Respiratory Tract, *Jour. Med. Research*, November, 1912.
Mallory, F. B.; Hornor, A. A., and Henderson, F. F.: Relation of Bordet-Gengou Bacillus to Lesions of Pertussis, *Jour. Med. Research*, March, 1913.

2. From a general view of the situation we should be inclined to say that the intravenous method has by far more adherents than the intramuscular in the injection of salvarsan. No definite statistics as to which method is most in favor are available.

### DEATHS FROM EATING CHESTNUTS

*To the Editor:*—The newspapers recently contained a report of the death of a woman from poisoning by eating chestnuts. Please explain how chestnuts can be poisonous. S. T. A.

Answer.—We have communicated with the Bureau of Plant Industry in reference to this question, and have received the following statement: "It is true that deaths have occurred in the region where the chestnut blight is prevalent, and that the chestnuts from these trees have been eaten by the patients. Further than that we have now no definite information. The matter is under investigation by this bureau at the present time, and we hope soon to know at least the fundamental facts."

### THE ROSENBACH AND AARON SIGNS

*To the Editor:*—Please describe (1) the Rosenbach sign and (2) the Aaron sign for appendicitis.

E. C. Brush, M.D., Zanesville, Ohio.

Answer.—1. We have been able to find three different signs known as the Rosenbach sign: (*a*) tremor of the upper lids in exophthalmic goiter when the eyes are gently closed; (*b*) loss of the abdominal reflex in cases of inflammation of the intestine, and (*c*) inability of neurasthenics to close the eyes immediately and completely on command.

2. We do not know what the Aaron sign is.

# Miscellany

## Medical Examinations After the French Revolution

On Aug. 18, 1792, the Constitutional Assembly of France passed a decree abolishing the medical faculties and societies and throwing open medical practice to any one who could pay for the privilege, the competitive examinations (*concours*) being mere farces. A chaotic state of affairs ensued, and had it not been for the law of 1794, establishing medical schools at Paris, Montpellier and Strasburg, to keep up the supply of army surgeons, France might in time have been under the absolute sway of quackery. On March 10, 1803, Napoleon, then first consul, put a stop to all this by a law which remained in force until Nov. 30, 1892, definitely establishing the status of physicians, surgeons, public health officers and irregular practitioners and requiring public examination of those seeking the right to practice. Dr. Ernest Wickersheimer, the scholarly librarian of the Académie de médecine (Paris), has just published an amusing protocol (*Paris médical*, 1913, x, 749) of an actual examination, held in 1804 in the department of l'Eure, by a jury presided over by Pierre Lassus of the Paris Faculté, which runs as follows:

First examination of Langlet, called La Chapelle, a self-styled "patented officer of health," in the presence of M. Lassus and the other members of the medical jury of l'Eure on the 8th Messidor of the year 12. Certain coarse and indecent remarks which he had made prior to his examination induced a member of the jury to attack him with the following questions:

Q. What is the clitoris?
A. The clitoris is the vagina, three parts together.
Q. Show us your stomach and your chest.
A. He showed one for the other.
Q. What is the eye?
A. The globe of the eye is composed of light; there is also extravasated blood and similar material.
Q. What is the ear?
A. The ear is the light which makes us understand things by its clearness, etc.
Q. How does a child come into the world?
A. A child comes as Adam, on its mouth, laboring the earth.
Q. What do you do when the anus is a blind alley?
A. If the man is dead, there is nothing more to do, still you might blow into the orifice to drive out the excrement by the mouth.
Q. What difference is there between a man and a woman?
A. The man has a virile member; the woman has two holes, the anus and the vagina.
Q. Where is the *fraise?*
A. In the umbilical bowel.
Q. Where is the pericranium?
A. In the placenta.
Q. Where is the atlas?
A. Among the vertebrae, or the shoulder-blade, or the spinal cord.
Q. Where is the peritoneum?
A. In the chest.
Q. What are the lungs?
A. They are the air, the breath of life.
Q. Where is the scrotum?
A. Near the anus and the vagina.
Q. What is the acromial apophysis?
A. It is the dislocation of the femur, or the round bone, or the tibia, of the fibula which comes out by its neck, a whirl, a sprain of cartilage.
Q. What is the great trochanter?
A. It is in the patella, tibia and fibula.
Q. Where is the sternum?
A. The sternum is above, inferior and within.
Q. Where are the atrabiliar capsules?
A. They are exterior.
Q. Where are the kidneys?
A. They are surcingular, exterior or above the girdle.
Q. Where are the suprarenal capsules?
A. Upon the kidneys.
Q. Where is the spleen?
A. Between the lungs and the livers, in the chest, where the livers have several branches.

Dr. Robert Fleig Library,
S. M. S. Medical College
22497

Q. Where is the thymus?

A. I am not a physician.

Q. Where are the cuneiform bones?

A. I give it up.

Q. Where is the pelvis?

A. The pelvis is the woman's region and nature.

Q. What is labor (*accouchement*)?

A. When the accouchement is for the time liquid and dilated, the fisobis presenting itself in the placenta, when the woman is in childbirth, her husband is scared to death and the woman about to be delivered has to remain in bed for six weeks, say the authors.

Q. After that what happens?

A. The clitoris being swollen with chagrin, prevents the woman from being delivered, the woman not proceeding in her trouble and the child not laboring for itself, cannot come into the world until the end of six weeks, on account of chagrin.

Q. What do you notice at the moment of delivery?

A. At the moment when a woman is delivered, the fundament enlarges and, for proof, I have seen a child and the excrement together in my hand.

Q. What are the ovaries? Where are they placed?

A. I renounce.

Second examination of Langelet La Chapelle, in the presence of the prefect of the department of l'Eure, Evrux, the 9th Messidor of the year 12.

Q. What is anatomy?

A. It comprises all the things of the body.

Q. How is the skeleton divided?

A. It is divided by the skull, occipital and cubital.

Q. What is the shoulder?

A. The shoulder is composed of the shoulder-blade and clavicle, forearm, ulna and radius.

Q. What is the wrist?

A. It is composed of the neck of the membrane.

Q. Describe the lower extremities.

A. It is composed of the thigh, patella, tibia, fibula, tarsus and metatarsus.

Q. What are the vertebrae?

A. All the vertebrae are of use. They are the essentials of man and his force.

Q. What are the loins?

A. I do not remember.

Q. How many ribs are there?

A. There are ten.

Q. What do you call the anterior bone of the chest?

A. It is the os sacrum.

Q. What is the peritoneum?

A. I do not remember.

Q. What are the lungs?

A. The breath, in the belly.

Q. Where is the heart?

A. In the chest.

Q. Where is the liver?

A. As it is in pigs.

Q. How many intestines are there?

A. Two; the large and the small.

Q. What is the cesarean operation?

A. It was Caesar who came into the world that way.

Q. How have you performed it?

A. By puncture, the bistoury being underneath the last rib, by an opening of four inches. After the first cicatrix, I opened, I took the infant in its receptacle, I placed the receptacle on the thighs of the woman, I sewed it up and put it back into the abdomen and I sewed the first cicatrix with an ordinary needle and a simple thread. The child lived; the bowels which came out were put back into the belly. I did this operation because the woman was feeble and without hope, and no pulse to be felt. She recovered without fever, kept her diet for four or five days; I dressed her with sugared wine. Six weeks afterward the woman was dancing in the assembly. The swelling had suppurated; I treated it with camphorated brandy; the swelling or thrombus still remains. This woman had a natural delivery one year before; a year afterward she was delivered very happily at the foot of a tree.

Q. How do you recognize a dislocation?

A. By the moving joints.

Q. How is a dislocated arm reduced?

A. I reduce it alone. I lift the arm and I reduce it with the finger in its proper place.

Q. What is the descent?

A. In the testicles, in the ring of the isles.

Q. What is the scrotum?

A. It is a part of women. It is placed at the fundament or anus. It is not an opening, it is a round part; it contains the vagina; it serves them for sitting down.

Q. Where is the spleen?

A. Above the womb.

Q. Where is the cerebellum?

A. In the head, in front.

Q. Describe the ear.

A. The ear is composed of temporals, occiput and parietals.

Q. Where are the seminal vesicles?

A. In the virile member, the bladder. In women, it is higher than in men.

The examiners in this droll questionnaire clearly understood their business. As it was plain that the candidate did not even know the parts of his own body, we can hardly blame them for exposing the extent of his ignorance by asking him about parts which do not exist. Dr. Wickersheimer does not state whether or not the candidate was successful, but the result may be inferred.

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## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

### PRESENT ACTIVITIES IN PUBLIC HEALTH

The growing interest in public health is illustrated by the attention paid to this question by life-insurance companies and other business organizations, and the establishment of departments of public health by some of the state universities. Many of the insurance companies, large industrial concerns and special societies also issue pamphlets on various specific topics.

#### REGISTRATION OF VITAL PHENOMENA

Probably the most intimate connection between public health and business so far established is that between life insurance and vital statistics. Mr. Louis I. Dublin, statistician for the Metropolitan Life Insurance Company, recently delivered an address before the annual conference of health officers of Indiana, which has been reprinted in pamphlet form. After discussing the value of birth and death registration from a public point of view, Mr. Dublin takes up their value from a personal and commercial point of view, showing by cases from the records of life-insurance companies the importance and value of birth, death and marriage registration, and the commercial value of properly kept records. He concludes his paper by saying, "I hope that I have indicated the extent and character of the losses which result from neglect of thoroughly registering vital phenomena. If communities were to realize that they are called on ultimately to meet these losses, I think that we would have an awakening of public interest in careful civic accounting of human life. . . . . In life-insurance companies alone, fully one-fourth of the disputes would never arise were adequate records on hand. The saving of losses due to present litigation could then be returned as larger benefits to our clients, and would remove many causes for dissatisfaction. We cannot regard these losses as anything more than downright waste."

#### MISSOURI DEPARTMENT OF PREVENTIVE MEDICINE

The University of Missouri, like the University of Wisconsin, has established a department of public health. In Missouri it is known as the Department of Preventive Medicine. This department offers to furnish to any citizen of Missouri, on request, practical information regarding the prevention of disease. A laboratory is also equipped to make any necessary examinations, these services being free of charge to the people of the state. Three pamphlets have been issued so far, one on "Bacteria and Disease," by Dr. O. W. H. Mitchell, assistant professor of pathology and bacteriology; and pamphlets on "Typhoid Fever" and "Contagious Diseases Among Schoolchildren," by Dr. W. J. Calvert, professor of preventive medicine. The last-named pamphlet has just been issued. It contains three chapters, one on "The Nature of Communicable Diseases, and the Ways in Which They Are Spread," one on "The Symptoms of the More Common Infectious Diseases," and one on "School Hygiene," under the head of "Cleanliness, Pure Water, Ventilation and Heating." The recognition of public health as a legitimate field for the state university, and the establishment of a department of preventive medicine with a laboratory free to the citizens of the state, is a marked step forward in the social program for the prevention of disease. The recognition of the closely allied facts that prevention of disease is a social problem, and that it can be solved only through public education, is most important. In these two suggestions lies the solution of the problem of preventable disease.

### PURIFICATION OF WATER-SUPPLIES

The United States Geological Survey has issued "Water-Supply Paper 315," which is published as H. R. Document 1236, entitled "The Purification of Public Water-Supplies." In it are discussed the sources of water-supply for cities in the United States. In the northern and middle Atlantic states the use of lake and spring water is common. In the more southerly states waters from rivers are more commonly used, especially in the Mississippi and Ohio valleys. In nearly 400 cities, 40 per cent. of the water-supply is drawn from wells, 25 per cent. from lakes, ponds or springs, 24 per cent. from rivers, and 11 per cent. from mountain streams. The various sources of city water-supply are discussed, and the development of water-works systems in the United States, water consumption, typhoid fever in the United States and water purification, with an exhaustive discussion of methods and comparative values.

The section on typhoid fever shows that in 1900 there were over 35,000 deaths from this disease, and that in 1910 the typhoid fever death-rate in the forty-eight cities having a population of 100,000 or over was 23.3 per hundred thousand. Under the main subject of "Water Purification" the methods of slow and rapid sand filtration and the different means of sterilization are discussed, with illustrations showing water-purification plants in different cities.

### ARMY HOSPITAL REPORT

The medical department of the United States Army maintains a general hospital at Ft. Bayard, N. Mex. The report of this hospital. just issued, shows that 928 patients were treated there during the past year; 56 deaths occurred, 46 of which were from tuberculosis; 686 patients were admitted during the year, of whom 154 were returned to duty; of 672 cases of pulmonary tuberculosis 46 were incipient, 288 were moderately advanced, 337 were far advanced, and one was a case of acute miliary tuberculosis. Of these, 32 patients were apparently cured, 77 were arrested, 352 were improved, 160 were unimproved and 51 died.

## PAMPHLETS ON PUBLIC HEALTH AND ALLIED TOPICS

The most interesting literature on public health questions is to be found at present in pamphlets and bulletins rather than in books or journals. Most of the state boards of health publish pamphlets on various subjects for popular distribution. The variety of subject, method of treatment and material found in these pamphlets constitutes one of their most interesting features.

### NORTH CAROLINA HEALTH BULLETIN

The *Health Bulletin of the North Carolina State Board of Health* for October shows on the first page photographs of eight babies which have taken prizes at baby contests in various Southern states, and the announcement. "Watch this page for North Carolina prize-winners after the state fair." The cover also contains a list of pamphlets and leaflets printed by the state board for free distribution. This list includes such subjects as care and feeding of the babies, flies and mosquitoes, hookworm, malaria, tuberculosis and vital statistics. An article from the *Progressive Farmer*, "Why I am Down on Patent Medicines," gives practical advice to the reader on this subject. The writer says, "I recognize their (patent medicines) harm as any one may do if she cares to read the literature published by the United States government and the American Medical Association." A pertinent article on freight-rates, a subject which no one would suspect had a very intimate connection with health matters, shows that 16,000 of the 40,000 deaths in North Carolina last year were preventable, and that the 16,000 preventable deaths involved a loss of over $27,000,000 to the state; that of the 80,000 cases of illness in North Carolina last year 40,000 were preventable, and that this involved an additional loss of $18,000,000, or a total loss of $45,000,000, as the preventable health waste of the state for last year. The writer then continues, "When it is estimated that our state loses as much as $5,000,000 annually in excessive freight-rates we hold conventions and conferences, and we organize and call extra sessions of the legislature; but when we lose $45,000.000 worth of our best North Carolina citizenship no one gets excited, no one talks of an extra session. Why?" The writer then shows that the principal trouble is that the people do not realize the amount of the loss through preventable diseases and the fact that this is preventable. He assumes correctly that when these two facts are recognized by the people, "we will begin public health work in earnest. As it is now, there is practically no public health work done in over 85 per cent. of the counties in the state."

### VERMONT BULLETIN

The *Bulletin of the Vermont State Board of Health* for September contains the proceedings of the fifteenth annual school of instructions for health officers, which has been recognized as a state institution for a number of years, the state paying the expenses of all health officers attending. Different topics were presented by officers of the United States Public Health Service and of the State Department of Health, followed by discussion of the duties of local health officers. Two hundred and thirteen health officers were present.

### MICHIGAN PUBLIC HEALTH BULLETIN

*Public Health*, the bulletin of the Michigan State Board of Health, for September is devoted largely to articles on school hygiene. Charles F. Tambling of the Central State Normal School discusses "The Normal School in Sanitary and Civic Education." Charles McKinney of the Michigan State Normal School writes on "Sex Hygiene in the Public Schools." After discussing the question in general terms he summarizes the difficulties under four heads, namely, the opposition of present public opinion, the lack of teachers capable of giving suitable instruction at present, the lack of a well-thought-out and thoroughly tested course of study, and the objection to the teaching of sex hygiene in the elementary schools under present conditions. The first and the fourth objections are not especially weighty. The second and third, however, are deserving of the most careful consideration. The value or harmfulness of a course of instruction in sex hygiene or in any other subject in the public schools depends entirely on the carefulness with which a proper course of instruction is planned and on the ability and knowledge of the teachers who will have charge of the course. Even the most ardent advocates of teaching sex hygiene in the public schools must admit that as yet no carefully thought-out course of instruction, suitable for intermediate, primary and high schools has been prepared, and that in many cases the teachers are nearly as ignorant on this subject as are the pupils. McKinney says that until recently no special courses in sex physiology and hygiene were offered in any of the colleges or normal schools of the country; that only one normal college so far offers a course which would probably fit a person to teach this subject; that the literature on the subject, aside from controversal and propaganda pamphlets, is scarce, and that even what there is is of doubtful scientific value and decidedly emotional. McKinney strongly advocates the instruction of sex physiology in the public schools as soon as the right conditions can be secured, and outlines the following steps as necessary for this result: Continued agitation and enlightenment of the public regarding the social evil, the inauguration of proper courses in colleges and normal schools for the training of teachers in sex hygiene, the initiation of such courses in high schools before separate classes as a part of the course in physiology or physical training, and the extension of such instruction in the grammar and intermediate grades as fast as the courses and the teachers can be prepared for suitable instruction. McKinney's article is a thoughtful and conservative expression of opinion from one qualified to speak with authority. Other articles on "Rural School Hygiene," "Medical Inspection of Schools," "Schoolroom Cleanliness" and "School Water-Supply," make the number a particularly interesting one.

## A CITY'S INVESTIGATION OF ITS PUBLIC HEALTH

The present interest in social and civic conditions in American cities is no longer confined to the larger cities, but is being taken up in smaller towns. The citizens of Newburgh, N. Y., wanted to learn the facts regarding their city and its administration. First proposed by a local minister and later by the local Associated Charities, a survey committee of fifty citizens was ultimately organized which asked the cooperation of the department of surveys and exhibits of the Russell Sage Foundation. With the cooperation of a number of public workers, investigations were undertaken in the public schools on public health, housing, delinquency, public library, recreation, industrial conditions and municipal administration, the survey being in each case carried on under the supervision of an expert in each branch.

The investigation in the public health situation in Newburgh shows the weakness of much of our municipal health organization. The report criticizes the organization of the health department, which consists of a board of seven members, with the health officer as the executive and servant of the board, instead of an expert administrator responsible for the work of the department. Another serious difficulty is the fact that the health officer is expected to give only an hour a day to the work of the department. One is not surprised at this situation when it is learned that Newburgh spends only 12 cents per capita per year for health purposes, or about 1 cent a month or a quarter of a cent a week to guard the health of each citizen. Certainly not much can be expected for this sum. The registration of births and deaths and the reporting of diseases is also criticized, more on account of the defects in the system than on account of personal shortcomings. Newburgh, it seems, is known as a "typhoid town," and the survey finds ample evidence to justify this designation. In the opinion of the inspector the presence of typhoid is entirely inexcusable and represents an economic loss to the city of about $40,000,000 a year. While the sewer system of the city is good, no one seems to know anything about the condition of the milk-supply, with the result that one infant out of every eight dies during the first year of life.

Tuberculosis, venereal diseases, medical inspection of schools, the lack of suitable hospitals, hospital equipment, street-cleaning, occupational diseases and other important subjects are also gone into in the report. The recommendation made is for a full-time health officer with a suitable salary and with proper authority and responsibility, with such assistance as he may need to organize and operate a modern municipal department of health. The report is summarized so that the issue is put plainly before the citizens of Newburgh, that the securing of a proper department of health and the prevention of diseases and the saving of life is simply a question of finance. The report on housing is also of interest from the public health point of view, covering lodging-houses, sewer connections, danger from fires, etc. The entire report is of interest as an example of the careful scrutiny to which all fields of municipal activity are now being subjected.

# *Medical Education and State Boards of Registration*

## COMING EXAMINATIONS

ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: State Society and Homeopathic, Dover and Wilmington, Dec. 9-11. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KENTUCKY: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: Regular, 1211 Cathedral St., Baltimore, Dec. 9. Sec., Dr. J. McP. Scott, Hagerstown.

MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 9-11. Sec., Dr. Geo. H. Matson, State House.

OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

PENNSYLVANIA: Philadelphia, Dec. 2-4. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

VIRGINIA: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

### Correction of West Virginia July Examination Report

In the report of the examination held by the West Virginia Board in July, 1913, one candidate was reported as a graduate of the University of Louisville. A foot-note stated that information from the college did not indicate such graduation. A later report from the West Virginia Board states that the candidate should have been given as a graduate of the Chicago College of Medicine and Surgery.

### Vermont July Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Examiners, reports the written examination held at Burlington, July 8-10, 1913. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 23, all of whom passed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Tufts College Medical School | (1909) | 85.9 |
| Albany Medical College | (1911) | 81.7 |
| Columbia Univ., Coll. of Phys. and Surgs., N. Y. | (1913) | 91.4 |
| University of Vermont (1911) 77.2; (1912) 80, 92.8; (1913) 77.5, 78.1, 79.5, 79.8, 80.1, 81, 81.7, 81.9, 82.1, 83.5, 84.9, 85, 85.6, 86.1, 88.1, 92.7. | | |
| University of Naples | (1904) | 80.2 |

LICENSED THROUGH RECIPROCITY

| College | Year. Grad. | Reciprocity with |
|---|---|---|
| Baltimore Medical College | (1896) | Maine |

### Missouri June Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written and oral examination held at St. Louis, June 16-18, 1913. The number of subjects examined in was 14; total number of questions asked, 210; percentage required to pass, 75. The total number of candidates examined was 160, of whom 144 passed and 16 failed. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent |
|---|---|---|
| | (1911) | 80.8 |
| Howard University, D. C. | (1913) | 87.1, 88.1 |
| University of Illinois | (1912) | 86.1, 89.6 |
| Rush Medical College | (1912) | 88.3 |
| Chicago College of Med. & Surg. (1913) 87.2 | (1913) | 85.6 |
| Hering Medical College | (1913) | 87.2 |
| Drake University | (1913) | 86.2, 88.2 |
| Tulane University, New Orleans | (1913) | 87.3 |
| Johns Hopkins University | | |

Harvard Medical School........................(1900) 82.3
Barnes Medical College, St. Louis...............(1905) 75
Hahnemann Medical College, Kansas City.........(1913) 84.7
St. Louis Coll, of Phys. & Surg...... (1909) 75; (1913) 76,8, 80.3
Nat. Univ. of Arts & Science, St. Louis........ (1913) 75.3, 77.8
Ensworth Medical College, St. Louis.............(1913) 77.8, 86.6
American Medical College, St. Louis (1912) 77.2; (1913) 75, 75, 75, 75.3, 75.6, 75.8, 77.5, 77.9, 79.1, 79.5, 80.6, 82.4, 83.3, 84.3, 84.4, 85, 85.6, 86.5.
University Medical College, Kansas City (1913) 75, 75, 77.4, 78.4, 79.5, 79.9, 81.2, 82, 82.7, 83.2, 83.6, 83.9, 84.5, 85.1, 85.7, 86.3, 86.5, 86.8, 87, 87.3.
Washington University, St. Louis (1912) 83.2, 86.5; (1913) 75, 77.8, 79.2, 80.6, 80.8, 82.3, 82.3, 82.9, 83.6, 83.8, 84.1, 84.8, 85.2, 85.3, 85.3, 86.2, 87.1, 88.1, 88.4, 88.8, 88.9, 88.9, 89, 91.2, 93.3.
St. Louis University (1912) 81.8, 86.1; (1913) 75, 75, 75.5, 77.2, 77.6, 78.3, 78.5, 78.6, 78.7, 78.8, 79.2, 79.3, 79.7, 80.1, 80.5, 80.5, 81.2, 81.3, 81.3, 82, 83.1, 83.3, 83.3, 83.6, 83.6, 84, 84, 84.1, 84.2, 84.3, 84.3, 85.1, 85.1, 85.2, 85.3, 85.4, 85.6, 85.7, 86.2, 86.7, 86.8, 87.1, 87.3, 87.3, 87.8, 88.1, 88.1, 89.4, 89.5, 93.1.
Columbia University, Coll. of Phys. & Surg., N. Y. (1913) 85.3
Eclectic Medical College, Cincinnati.............(1913) 89.3
Jefferson Medical College .......................(1872) 75
Meharry Medical College.........................(1913) 82

FAILED

University of Arkansas .........................(1912) 71.2
College of Physicians and Surgeons, Keokuk......(1893) 51.6
Ensworth Medical College, St. Louis.............(1912) 64.4
St. Louis College of Phys. and Surgs. (1913) 55.3, 59.1, 66.2, 68.1
American Medical College, St. Louis (1909) 58.2; (1912) 72.5; (1913) 67.6, 71.3.
University Medical College, Kansas City (1911) 62.6; (1913) 69.5, 72.
National University of Arts and Science........(1913) 72.3
Meharry Medical College.........................(1913) 62.1

# Book Notices

MASSAGE. Its Principles and Technic. By Max Böhm, M.D., Edited, with an Introduction, by Charles F. Painter, M.D., Professor of Orthopedic Surgery at Tufts College Medical School, Boston. Cloth. Price, $1.75. Pp. 91, with 97 illustrations. Philadelphia: W. B. Saunders Company, 1913.

Considering the fact that literature on the technic of massage, particularly in English, is very rare one will acknowledge that the author is filling a want. The book is short, to the point and ought to be well received. There is first a chapter concerning general preparations and length of sitting, as well as definitions of the various manipulations; then well-illustrated chapters on the massage of joints, muscles, nerves and skin, abdomen and the general body massage. There are also a few anatomic pictures illustrating why it should be done just so. One might, of course, find reasons for difference of opinion. On page 38 there is a description and illustration (Fig. 21) of the way in which by raising the arm, one can get at the capsule of the shoulder-joint and manipulate it, in case it is thickened. Of late, writers on massage advise against vigorous manipulation in the axilla, as one might harm the brachial plexus, and we are inclined to endorse that opinion.

ANAPHYLAXIS. By Charles Richet, Professor in the Faculty of Medicine, Paris. Authorized Translation by J. Murray Bligh, M.D., Medical Registrar to the Liverpool Royal Infirmary with a Preface by T. R. Bradshaw, B.A., M.D., F.R.C.P. Cloth. Price 3 shillings 6 pence. London: Constable & Co., 1913.

To Richet belongs the credit of first giving to the profession a comprehensive account of the main phenomena designated by "anaphylaxis," the word coined by him to signify the opposite of protection or phylaxis. Because there appeared to develop an increased sensitiveness to a poison after previous injection of that poison this new word seemed quite appropriate. We now know, paradoxical as it may seem, especially in the light of the symptoms, that there is no actual increase in susceptibility to poisons in anaphylaxis, but an increase in the power of the body of the so-called sensitive animal to split the sensitizing protein into poisons. Failure to distinguish clearly between the original meaning of anaphylaxis and the real nature of the condition to which it is now applied is a serious obstacle to a clear understanding of what is written and said about this subject. This distinction must be kept in mind constantly in reading Richet's account of the various phases of anaphylaxis, or perhaps better allergy. All students of allergy will welcome this presentation of the subject by one who has contributed so much to our knowledge of it. Generally speaking, his views accord with those current in American and German literature. Only little effort is required to accommodate one's self to Richet's nomenclature. In places the statements are abrupt and even obscure, perhaps because of the translation; but examples of the masterly lucidity of the French are not wanting. The physician who is not already thoroughly familiar with the general facts in regard to anaphylaxis will find this a rather difficult book to understand, as the author frequently appears to assume a considerable knowledge on the part of the reader. It is annoying that there is no index and it is difficult to see why the bibliography in the English edition should have been limited to the years 1910, 1911 and part of 1912.

DIGEST OF COMMENTS ON THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA (EIGHTH DECENNIAL REVISION) AND ON THE NATIONAL FORMULARY (THIRD EDITION). For the Year Ending December, 1911. By Murray Galt Motter and Martin I. Wilbert. Paper. Pp. 683. Hygienic Laboratory, Bulletin No. 87. Washington: Government Printing Office, 1913.

In the period covered by this, the seventh in the series of "Digests," the critical character of the comments on the German Pharmacopeia might be taken to indicate that the makers of pharmacopeias must in the future cater to a more and more discriminating constituency. This attitude on the part of users of pharmacopeias is still further emphasized by the growing demand for a limited materia medica and, by inference, the limitation of the scope of the pharmacopeia to substances of recognized therapeutic efficacy and substances which, to some degree at least, lend themselves to adequate standardization, whether chemical or physiologic. Coupled with this is the demand, now become international, for greater uniformity in the matter of nomenclature and of standards, together with the tests for purity and identity, and the method of making these tests, on which the standards are based. These tendencies are well reflected in this volume, nearly two-thirds of which is devoted to comments on official articles. The twenty pages or more devoted to the subject of clinical tests should prove a real aid to those physicians and pharmacists who have the time, the inclination and the facilities for clinical laboratory work, while a score of refences to the literature on disinfectants presage the coming of light and order in the somewhat chaotic field of modern preventive medicine.

BEHANDLUNG DER ANGEBORENEN UND ERWORBENEN GEHIRNKRANKHEITEN MIT HILFE DES BALKENSTICHES. Von Prof. Dr. G. Anton, Direktor der königl. Klinik für Geistes- und Nervenkrankheiten in Halle, a.S., und Prof. F. G. von Bramann, Direktor der königl. Chirurg. Universitätsklinik in Halle a.S. Paper. Price, 9 marks. Pp. 188, with 54 illustrations. Berlin: S. Karger, 1913.

In this monograph are described the underlying principles, the technic and the results, in a variety of cases, of efforts to relieve intracranial pressure by puncture of the corpus callosum. The clinical histories of the cases in which the procedure has been used, which represent hydrocephalus, hypophyseal tumors, tumors of the brain and cysticercus, are given in full. On the basis of the experience here recorded the indications, contra-indications and possible dangers of the operation are discussed. It appears that in inoperable intracranial tumor the pain and the distress of the patient may be greatly relieved by puncture of the callosum, and that good results have been obtained in other cases of intracranial pressure. The monograph consequently is of interest and importance to surgeons.

PROTECTIVE INOCULATION AGAINST CHOLERA. By W. M. Haffkine, Bacteriologist with the Government of India. Paper. Price, 4 shillings 6 pence net. Pp. 98. Calcutta: Thacker, Spink & Co., 1913.

The author gives an account of his work in the preparation of an anticholera vaccine and of its application to the prevention of cholera in India. This occupies the first two parts of the book. The third deals with the effects of devitalized "Cholera Vaccine II," as he calls his preparation of living cholera germs. He regards it as demonstrated that dead cholera germs will produce immune bodies in the human organism; but experience must show whether or not the preparation will protect man against cholera germs taken into the intestinal tract. Experiments to test this point should soon be made, since the greater convenience of the devitalized vaccine will render it much more useful than the living germs in immunizing large numbers of people.

WHAT HEART PATIENTS SHOULD KNOW AND DO. Suggestions for Persons Suffering from Diseases of the Heart and Blood-Vessels. Exercise, Diet, Prevention, etc., and Advice as to the Regulation of Their Lives. By James Henry Homan, M.D., Special Lecturer on Cardiovascular Diseases in the University of Georgia. Cloth. Price, $1.20 net. Pp. 204. New York: Dodd, Mead & Co., 1913.

The author has written a book of advice ostensibly for patients suffering from heart-disease, but its scope is so diffuse that it can be regarded as advice applicable to any one quite as much as to the sufferer from heart-disease. The book is best described by the following headings: "Relaxation," "Clothing," "Climate and Environment," "Exercise," "Diet," "Bodily Waste," Blood-Pressure," "Obesity," and the advice given by the author is conservative and good. It is not better than many books already on the market giving general hygienic advice, and the literary style is not so good as some of the others.

GRUNDRISS DER FERMENTMETHODEN. Ein Lehrbuch für Mediziner, Chemiker und Botaniker. Von Professor Dr. Julius Wohlgemuth, Assistent am Kgl. Pathologischen Institut der Universität Berlin. Paper. Price 10 marks. Pp. 355. Berlin: Julius Springer, 1913.

The purpose of this book is to describe clearly all the methods that have proved useful in the study of ferments. The intention of the author has been to meet the needs of the practical laboratory worker, and the directions are given with much care and detail with the view of helping those who are less experienced. In the general part the nature of ferments and the fundamental principles of their study are discussed in a clear and simple way; in the special part, the methods for the different classes of ferments are given. In view of the growing importance of the study of ferments in diagnosis, the book will interest all physicians who are in touch with the development of recent work.

# *Medicolegal*

## Breach of Contract to Furnish Employee Medical Attention

*(Thomas vs. Tennessee Coal, Iron & Railroad Co. (Ala.), 69 So. R. 627)*

The Supreme Court of Alabama reverses a judgment rendered in favor of the defendant, which was sued for damages for failure to furnish the plaintiff necessary medical attention when he became ill with severe cramps and pain in the abdomen, while in the defendant's employ. According to the plaintiff's testimony, which did not seem to be in any way contradicted, the defendant's agent assured him, when he entered the defendant's service, that for the payment of $1 a month, "in case that you or any of your family gets sick, why, the company doctors will give you service." It was not disputed that the defendant had in its employ at that time, and at the time that the plaintiff became ill and required medical service, a practicing physician charged with the duty of giving needed medical service to its employees at its plant at which the plaintiff was employed. The physician's contract with the defendant, however, was to serve employees and their families at their homes within a restricted territory only, whereas the plaintiff's residence, where he was taken sick, and where the physician was called on to visit him, lay a mile or more outside of that territory. Still it did not appear that the plaintiff was informed of this restriction, and it was not denied that the defendant deducted the stipulated fee of $1 a month from the plaintiff's wages as consideration for the medical service promised to him and his family.

It resulted, the court says, that, while the physician was not obligated to either the plaintiff or the defendant to render the service requested in this particular case, the defendant was none the less obligated to the plaintiff to have the physician do so; at least the contract between them was fairly open to that interpretation by the jury, and fairly open to the interpretation, also, that in case of need the company's physician should be summoned by a call made immediately on him, and not mediately through some other company official. For if the company's physician, provided for such an emergency as here arose, failed or refused to respond to the plaintiff's call, the plaintiff was certainly under no duty to wait and take the matter up with the company for negotiation and adjustment, and, perhaps, die the meanwhile of inattention and neglect, as it seems he would very likely have done.

So far as the defendant's obligation to the plaintiff was concerned, the limited service it required of its regular physician, the fact that that physician was under no duty to travel outside of a designated territory to serve the plaintiff at his need, was wholly immaterial to the case, in the absence of notice to the plaintiff of such a restriction when he was contracting and paying for a service not thus limited. It might, indeed, be reasonably presumed that for mere service at the plant or infirmary in case of injury he would not have chosen to pay the monthly fee; and, without informing the plaintiff of the stated restriction, the defendant had no right to take his money, and at the same time fail to provide for needed medical service to him at the hands of its regular physician.

This was the breach averred in one count of the complaint, and there was evidence before the jury to support it. The breach charged was a breach by the defendant, not by the physician, and the physician's refusal to attend the plaintiff was, in law, a failure by the defendant to discharge its duty to the plaintiff, namely, to arrange with its regular physician to attend him in sickness, and to actually effect such attendance by that antecedent provision. The trial court erred, therefore, in instructing the jury to find for the defendant, and its judgment must be reversed.

## Construction and Validity of Law Prohibiting Obnoxious Disease and Deformity Exhibitions

*(People vs. Kennedy et al. (Mich.), 141 N. W. R. 887)*

The Supreme Court of Michigan affirms a conviction of the defendants under the Michigan statute entitled "An act to prohibit, discourage and punish the exhibition of deformed human beings, diseased or deformed human bodies, or parts thereof, or the representations of the same, for any other than purely medical purposes." The prosecution was under Section 2, which provides. "It shall be unlawful for any person or persons to so expose or exhibit in museums or elsewhere diseased or deformed human bodies, or parts thereof, or representations of the same, which would be indecent in the case of a living person, except as used for scientific purposes before members of the medical profession or medical classes."

It appeared that the defendants were engaged in the practice of medicine in the city of Detroit and occupied the three upper floors of a building. At the entrance to their offices was a sign reading, "Doctors K. & K. Museum." On the upper or fourth floor, contained in cases, were representations, in wax or other substance, of portions of human bodies of both sexes described within the prohibition of the statute. The complaining witness, on application, went up in company with the defendants' office boy, who, under the direction of the defendants, occasionally took people up to the fourth floor, opened the door for them, and turned on the light. Those taken up by him were always adults and only one at a time. The defendants contended that for years this collection had been stored in the attic of another building not accessible to anybody; that, after they occupied their present location, they moved it from the attic, had the different pieces painted and mounted, and placed them on this top floor "so that they could be seen favorably, in case we wanted to sell them"; that they tried at different times to make a sale; that they were not exhibited to the public. One of them testified. "We do not exhibit this stuff to the public. Once in a while if a person calls, we send them up. Sometimes we refuse people."

It was argued that Section 2 is unconstitutional because not within the scope of the title of the act, and because the offense charged in that section is not embodied in the enacting clause. But, the court says, as appears from the entitling of this act, it is a police regulation clearly within the power of the legislature, and was enacted to prohibit, discourage and punish the exhibitions therein described. The objection was without merit for the reason that the exhibition of the representations of the parts of the human body prohibited by Section 2 of the statute charged and described in the complaint was clearly within the terms of the entitling of the act. The exhibition prohibited by this section of the statute might be either public or private and includes an exposure to a single individual.

The construction of this portion of the statute is one of first intention before this court, and it will be proper to say that the defendants' contention was that the legislative intent in this statute was to prohibit the exhibition in public of the prohibited subjects, with or without charge, and that the words "exhibition," "expose," and "exhibit" should be construed in harmony with such intent, and the jury should have been so instructed. But the court does not think that Section 2 should be so construed. The legislature intended by this section to prohibit the exposure of these subjects in public or in private to any person or persons, "except as used for scientific purposes before members of the medical profession or medical classes." In the court's opinion it is a statute enacted in the interest of morality and decency. The terms of the statute are not technical, and the words used should be given their ordinary and usual meaning.

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# *Society Proceedings*

## COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

## CHICAGO MEDICAL SOCIETY

*Regular Meeting, held Nov. 12, 1913*

The President, Dr. Charles P. Caldwell, in the Chair

### Relations of, and the Lesions Produced by, Various Forms of Streptococci, with Special Reference to Arthritis

Dr. E. C. Rosenow: About a year ago I became interested in the question of the transmutation of the pneumococci and streptococci, or the various organisms of the streptococcus group. It had been known previously that certain streptococci may take on cultural features and other properties quite different from those they had when first isolated. Indeed, the form of endocarditis which we have known clinically as chronic septic endocarditis is caused by a streptococcus, the so-called *Streptococcus viridans*, which by animal passage can regularly be converted into pneumococci. It is generally considered that the *Streptococcus viridans* is an intermediate organism between pneumococci, on the one hand, and streptococci on the other. I felt that it might be possible for a typical pneumococcus, for instance, to be converted into a typical streptococcus, and this has been done. The transformation is so complete that I have no hesitation in saying that if a bacteriologist can differentiate a typical pneumococcus from a typical streptococcus, then it is possible to transform one into the other, and as we transform pneumococci into streptococci there are intermediate states and intermediate organisms. At a certain stage in the transformation of one organism into another — the hemolytic streptococcus, for instance, into the *Streptococcus viridans* — it behaves culturally and looks like the *Streptococcus viridans*, when injected into rabbits it will produce the lesions more or less characteristic of that organism, producing a typical endocarditis, and that of a type similar to the one produced by the organism as isolated in the case of the chronic septic endocarditis. When you increase the virulence of this organism somewhat, it will take on cultural and other features resembling the organism isolated from cases of rheumatism, and as you increase its virulence still further it will take on the characteristics of a pneumococcus.

We know that hemolytic streptococci have a marked affinity, experimentally, for the joints of animals, and we know, too, that it is likely that hemolytic streptococci have a marked affinity for the joints in man. A typical hemolytic streptococcus was isolated originally from a case of tonsillitis. That organism, when injected into animals, showed a marked affinity for the joints, producing an arthritis repeatedly. A blood-vessel had in it a clot containing rather a large number of streptococci. An animal was injected intravenously with another strain of hemolytic streptococci, and when it was killed five days later a multiple arthritis of the suppurating type was found. A section of the synovial membrane taken from the neighborhood of the plica showed a thrombosed vessel containing round cells, with streptococci in the blood-vessel as well as in the surrounding tissue.

In another experiment, the first strain of organism, a hemolytic streptococcus, was transformed into a *Streptococcus viridans*. Instead of having the single coccoid forms in the chain, there was a tendency to chain formation, and a marked tendency to form in clumps. This hemolytic streptococcus was converted into *Streptococcus viridans* in the test-tube by simply placing it in symbiosis with the *Bacillus subtilis*. When it acquired this morphology, it acquired, when injected into an animal, features and the affinity for the heart-valve instead of the joint, producing now the same organisms repeatedly, and hemorrhage in the heart-valve and endocarditis, without producing arthritis.

A man had had an attack of articular rheumatism. He suddenly began to have severe muscular pain all over the body, with distinct localizations in various muscles, the intercostal muscles especially, the flat muscles of the skull, the occipitofrontalis, and the muscles of the shoulders. He had a beautiful lesion in the supinator longus and also in the biceps, in each instance within the tendon sheath. A cross-section of the biceps muscle showed the striation of relatively normal muscle with round-cell infiltration and hemorrhage, and a nodule somewhat larger than we find in the animal, but very typical. That is not only evidence of a real myocarditis, represented here in a man, but from this area the same organism reproduced myocarditis in a rabbit, and the organism was again isolated from that rabbit.

This affinity for these various structures is not merely accidental; it is certain. When the rabbit has acquired that affinity it is so marked that you can inject half a dozen animals with varying doses of bacteria and have a number of lesions produced in proportion to the size of the injection. Moreover, you can inject that same strain of organism and pass it through one animal, and in the next passage it will probably produce a few muscle lesions, or none at all, and after the second and subsequent passages you can do what you will, but you cannot produce a muscular lesion. The facts are that at certain stages of morphology, chemistry, or what not, these affinities for localization are absolute and very distinct.

We have discussed the marked and really characteristic affinity of hemolytic streptococci for joints—the evidence in man. The evidence, experimentally, is complete. We have shown that the organisms isolated as *Streptococcus viridans* have a marked affinity for the heart-valves, producing clinically that form of endocarditis that is so fatal, the chronic septic endocarditis, and a fatal endocarditis in rabbits. We have shown that the *Streptococcus rheumaticus* has the same affinity, but in no instance producing the lesions so badly as in the others.

These organisms have an affinity for other structures of the body—the mucous membrane of the stomach of a dog, which shows a large area of necrosis forty-eight hours after an intravenous injection of streptococci; the mucous membrane of a rabbit's stomach showed a beginning ulceration forty-eight hours after injection.[1]

Experimentally, the ulcers which I have produced by the intravenous injection of these organisms resemble more the type of ulcer seen in man than has been noted by other observers. The possibility of ulcer of the stomach in man being infectious, and the evidence that ulceration in the duodenum or stomach may have its origin as an infection, surely is suggested by results of this kind. I have made cultures from ulcers in man, and in two of those ulcers I was able to isolate streptococci, not from the surface, but from the depths of the ulcer. In one of these the affinity for the mucous membrane of the stomach in dogs was more marked than any other, producing a most beautiful ulceration in the stomach, and a slight, low-grade enteritis, and that was all the dog had. In the animals in which these organisms produced ulceration of the stomach the most common associated lesion was a cholecystitis, and beginning gall-stone formation. When the organism of rheumatism is injected, it is common to obtain marked ulceration and inflammation of the appendix in addition to the joint lesion. The organism from articular rheumatism has never produced ulceration of the mucous membrane of the stomach until it has been passed through a number of animals.

Owing to the cooperation of Drs. Mayo, Bevan and Ochsner I have been able, in conjunction with Dr. Sanford, to study the bacterial flora of four chronic duodenal and gastric ulcers, together with the regional lymph-glands in one. The number of colonies of organisms were very few, staphylococci being the predominant organism. In two cases, however, we obtained streptococci and one of these showed an affinity for the stomach mucous membrane of rabbits and dogs which was very striking. These results are very suggestive of the work which may be accomplished if surgeons will cooperate to furnish clinical material for study of this nature.

The affinity for the stomach mucous membrane is great; the affinity for the mucous membrane of the gall-bladder is also great. The production of inflammation of the gall-bladder is not always, I am absolutely sure, an expression of the bile, secondarily infecting the gall-bladder, but it is an inflammatory process just as in the heart-valve and in the joint, proving absolutely that the mode of origin in some instances, in which the conditions were ripe, was embolic, and that the bile was infected secondarily from the nodular inflammation in the mucous membrane and the ulceration.

One of the lesions that is most common about this grade of virulence, although a little higher virulence is more favorable, is the picture of an ascending pyelonephritis. I shall never have any trouble in the future, after seeing the results of these experiments, in explaining where the infection comes from in a patient with gall-stones who has not the history of typhoid, and I shall no longer have any trouble in satisfying myself where the infection comes from that forms the nucleus of a mural renal stone. I feel that the question of ulcer of the stomach and duodenum is entirely within control by proper methods, and that surgeons must come to our aid.

### Clinical Aspects and Medical Management of Arthritis Deformans

Dr. Frank Billings: The beginning of this work on joints started with an investigation of chronic infectious endocarditis, when the *Streptococcus viridans* was discovered in the circulating blood of patients suffering from this disease; but with such a worker as Dr. Rosenow that organism soon was chased down to a pneumococcus, and the report which I made at Atlantic City about seven years ago followed. These cases were reported as pneumococcus endocarditis, which was disputed by Eastern men and others, who said that we had made a mistake; but subsequent reports and Dr. Rosenow's report to-night prove that the work done in those days by him, that of the transmutation of *Streptococcus viridans* into the pneumococcus, was correct. Following that came the work on the joints, and we have gained a knowledge of arthritis deformans that we have not had before.

Chronic arthritis with deformity is, in my opinion, primarily of infectious origin. Usually the infectious micro-organism is a streptococcus. The work of Rosenow shows that the cultural and pathologic characteristics of the streptococcus may be changed by varying the culture-medium and by serial animal inoculation. The occurrence of chronic infectious endocarditis due to the *Streptococcus viridans*, the acute arthritis rheumatica of chronic arthritis due to a streptococcus, of myocarditis, acute and chronic, due to still another strain of the streptococcus modified from strains of other streptococci by varying the culture methods, seems to show that the mutation of these strains may occur in the animal or man at the point of focal infection. It is an important principle, not yet absolutely proved, that an organism can be transformed in cultural characteristics and pathogenic quality in the test-tube and by passage through animals, and is suggestive that the same organism in man, focally situated, may change and produce various lesions, in one endocarditis, in another acute arthritis, in another myocarditis, with or without chronic arthritis of a deforming type.

Confusion has arisen from the attempt to classify deforming joint disease anatomically. In the same patient one may find varying anatomic changes, these depending on the source of the blood circulation of the joint, in part, and apparently, also, on the resistance of the tissues to the infectious agent, and, finally, to the degree of virulence of the micro-organism infecting the tissues of the joint. The circulation to the joint structures consists of three separate systems: that to the periarticular structures, that to the synovial membrane and its reduplication, and that to the medulla of the bone in the shaft. This explains the variety of anatomic changes which occur in any form of chronic arthritis. If you will examine these patients carefully, you will sometimes find all types in one individual, but not in all. Practically all patients with deforming arthritis suffer from chronic myocarditis with interstitial overgrowth, and consequently contraction. Heretofore this muscular contraction has been thought to be due to nervous influence, or a secondary event in chronic arthritis, due chiefly to the posture of the limbs involuntarily assumed to relieve the pain in the joints. This is true in some instances, or in part in all possibly, but in arthritis deformans the shortening occurs in muscles when near-by joints are not involved. Culture yields in many instances micro-organisms of a streptococcoid type. It is our opinion that these are the cause of myositis and will probably prove to be mutation forms of the streptococcus organism found in the tissues and nodes of arthritis deformans.

In addition to the primary infectious origin of the invasion of joints and muscles in arthritis deformans, there is unquestionably an associated, probably secondary, change in metabolism which intensifies the anatomic joint changes, and is further manifested by a general nervous irritability, frequently a secondary anemia, loss of weight, disturbed digestion, etc. In part, the poor general nutrition is due to the protracted illness, with deprivation of proteins, and lessening of the general strength by hot baths, and by too much irrational drugging. In addition, there are metabolic changes in bones, cartilage and ligaments, and in the muscle tendons, which we do not understand. The best example is the poker-spine of a spondylitis deformans, which has been compared with the melted tallow which flows down and hardens on the candle. Possibly, future study may explain this, and also that these metabolic processes are set up as a reaction to the bacterial toxins.

Therefore, I would consider arthritis deformans as a clinical entity based on the established proposition of the existence of a chronic focus of infection due to a streptococcus which is usually located in the faucial tonsil or in the antra of the head, or in the jaw, related to the alveolar processes, or more rarely the gall-bladder, appendix, prostate or elsewhere. The streptococcus is isolated from the infectious focus and is susceptible of mutation in cultural characteristics and pathologic effects. Finally, there is an associated chronic myocarditis, apparently due to a type of streptococcus that has no affinity for the muscles. I think that this clinical entity due to the streptococcus may be differentiated from other infections of chronic arthritis, if one keeps in mind the characteristics which I have mentioned.

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[1] See article this issue, p. 1948.

Gonorrheal arthritis and especially spondylitis due to the gonococcus may be difficult to separate from arthritis deformans; but the gonococcal focus may be located in the urinary tract, the prostate or more frequently in the seminal vesicles, and thus settle the question. I have never seen the Neisserian organism cause a myositis.

The first step in the treatment is a thorough investigation of each patient. An attempt must be made to find the focal cause. While I believe that the faucial tonsil is more frequently the seat of focal infection than any other point in the body, still a thorough examination must be made of the sinuses, the teeth, the jaw and the pelvic organs as to the possible presence of a chronic focus of infection in the gall-bladder or appendix, and in the event of gastro-intestinal diseases, associated especially with stasis of the intestinal contents, a study of the feces as to the intestinal flora should be made. If the patient has suffered from frequent attacks of tonsillitis, if the tonsils show infected crypts, even though they be small, they should be removed. A large fibrous tonsil rarely causes the trouble. It is the small tonsil, usually, that contains the infectious organism in an obstructed crypt or an abscess cavity. My point is not to limit the investigation to the tonsil, but to search for the possible focus of infection elsewhere. If none is found elsewhere, it is my opinion that the tonsils should be removed, even though the history is negative to attacks of tonsil disease.

The aid of the orthopedic and general surgeon is frequently necessary to correct deformities due to contracted muscles, and in the application of proper temporary braces, etc. The surgeons have even restored dislocated joints for us and stretched the contracted muscles by putting on splints. The hygienic management does more than any other one thing to improve the patient.

Finally, immunity is still further established by the judicious use of autogenous vaccines, repeated every five or six days, in doses varying from 50 to 200 million. We used to employ larger doses, but experience showed quite as good results from the use of smaller doses without some of the disadvantages of excessively large doses. I have yet to see one patient who suffered from arthritis deformans improve under treatment with stock vaccines. This is probably due to the fact that the source of the infection has not been searched for and removed.

Arthritis deformans is an infectious entity. There is a varying degree of joint involvement, sometimes proliferative or hypertrophic, sometimes degenerative or atrophic. In practically all patients there is a chronic myositis, sometimes quite generalized. Practically always there is a general debility, a malnutrition, and probably a secondary faulty metabolism. The focal infection which may give rise to arthritis deformans is usually located in the head, but may be located elsewhere in the body.

The treatment and management must comprise: (1) the removal of the cause; (2) improvement of the general condition of the patient and resistance to the infectious organism by a personal hygiene, including good food, pure air, rational calisthenics and graduated exercises, with cheerful environment, and (3) the use of autogenous vaccines. The treatment of such cases should be carried on in a hospital in which team-work of the staff may be used for the investigation and removal of the cause, and subsequent treatment, both medical and surgical, may be carried out.

### Etiology of Biliary Tract Infections and Their Relations to Duodenal Ulcer and Appendicitis

DR. CHARLES L. MIX: The blood-supply of this region has something to do with the distribution of the lesions. The superior mesenteric artery is the supply of the appendix, and the region of the pylorus is supplied by the hepatic artery primarily, and that branch known as the superior pancreaticoduodenal. This one artery supplies both the gastric and the duodenal side of the pylorus. It supplies that part of the pylorus which hangs free in the gastrohepatic omentum, or, rather, fastened to it by the hepaticoduodenal ligament. This one artery supplies, therefore, that portion of the stomach which is the site of the ulcer, and it is not at all unlikely, in accordance with the embolic theory, that the emboli may enter on either side of the pyloric line, or in it. They may pass into the pyloric branch of the hepatic, but it is more likely, since the pathway of infection is more straight through the gastroduodenal, that they may pass straight down that pathway in somewhat the same manner as infection passes up, as a rule, to the left side of the brain from the arch of the aorta in cases of cerebral embolism.

The lymphatic supply of this region also merits attention. The appendix has coming from it two sets of lymph-vessels, or, one might say, three. There are in all of the mucous membrane structures two sets of main lymph-vessels. These have not been described until recently. One of these lymph-vessels, and a very important and somewhat disregarded one, is that which runs in the mucous membrane itself, and is so near the surface of the mucous membrane that it for a long time escaped attention. The next set is that which runs in the submucosa, and then outside of that, beneath the peritoneum, is another subserous set of lymph-vessels. These three sets are more or less distinct from one another. Coming from the appendix, therefore, is a set of currents which may ascend into the cecum, and then up the colon, in this mucous layer of lymph-vessels, or we may have the lymphatic current passing along the subserous surface, but along the colon, giving rise to certain cases of inflammation and extension of peritonitis, localized, sweeping up along the cecum toward the ascending colon, and producing numerous adhesions.

In the region of the duodenum, pylorus and stomach there is the same set of lymph-vessels. The mucous lymph-vessels are directly continuous through the pylorus, so that the gastric mucous lymph-vessels, the pyloric mucous lymph-vessels and the duodenal mucous lymph-vessels form one system. There is a similar system in the muscular and another in the subserous coats. These all make their way into nodes which pass up first along the gastroduodenal artery and then to the lymph-vessels, and from there to the transverse fissure of the liver, and the disturbance is apt to localize at the entrance of the portal vein, especially in cases of specific infection. There is one fundamental lymphatic law which can be adhered to, and that is that infection follows the lymph-vessels not into organs, but from organs toward other structures; also in all tubular structures, that is, in all ducts, in the body coming from glands this same law holds. You find them in the urethra and running to the bladder and the ureters to the kidney. Then, the lymphatic currents from the ductus choledochus run up to the hepatic duct and then to the liver, and those of the gall-bladder run through the cystic duct toward the common duct. Of course, it is possible that infection may be carried along this lymphatic system.

Every surgeon knows that these various regions are frequently related to one another. Often in operating for stomach or duodenal ulcer foci of infection are found in the appendix or gall-bladder, and frequently in the pancreas. Ochsner has reported that in 35 per cent. of his gall-bladder cases he has found an infected appendix. Kehr of Germany has removed the appendix in a large number of his gall-bladder cases.

As to the origin of duodenal and gastric ulcers, he believes that the theory of contact ulcer is very true. Contact ulcer is undoubtedly an embolic process. The work of Rosenow is rather conclusive as to the origin of these ulcers by the embolic process.

Up to about three years ago I was not a believer in the general statement made by many patients with duodenal ulcer that their attacks came on more particularly in the spring and fall. I have questioned many, and have found that duodenal ulcer is a disease more prevalent in the fall. Why is this so? The work of Rosenow is to some extent an answer. It is because of the possibility of a generalized infection in the body at certain periods of the year. Those due to the *Bacillus coli communis* probably will not be found to have any particular relation to any period of the year.

The same possibilities are present for infections of the biliary passages. There may be either a cholecystitis and a cholangeitis arising together, which is probably a frequent occurrence, much more so than we think, or the cholecystitis may follow the cholangeitis, or vice versa. The origin of these infections bacteriologically has been found to be due in the great majority of cases to two germs, *Bacillus coli communis* and *bacillus typhosus*. A Japanese observer has reported that 17.9 per cent. of his cases were due to other parasites instead of bacteria. The relation of gall-bladder disease to pregnancy I shall merely mention. It is probable than an element of biliary stasis in corset-wearing enters into consideration in these cases, because of the discrepancy of gall-bladder disease among Japanese women, 3 to 2 among men, and in Europe and America as 12 to 3 between women and men.

Another interesting point in connection with gall-bladder infection is incidence as regards advanced age. Old men are far more apt to have gall-bladder disease than the younger. At 70, the chances are even. That, of course, is due to the fact that the longer one lives the greater are the chances of acquiring some sort of infection.

The most common preliminary diseases which may lead up to trouble with the gall-bladder are: (1) typhoid fever; (2) influenza; (3) rheumatism, and then various forms of disturbance of the bowel, malaria, syphilis and peritonitis.

It is difficult to account for the spread of infection from the appendix to the gall-bladder; the portal blood is the only possible method, and it is only the chronic cases that produce this infection. There is one other possible source of infection, and that is a direct absorption of the blood-stream in the appendix, with consequent infection of the walls of the gall-bladder and liver directly. One point regarding the appendix: Chronic disease of the appendix does promote duodenal stasis, and with that you have an excellent chance for the development of a large number of germs; but the way of infection through the common duct and the liver I do not believe in at all. The simultaneous development of gall-bladder and appendix disease will probably take place, if it does take place, through the blood-stream. It cannot take place in any other manner. It is possible, but not probable, that infections of the gall-bladder take place by way of the portal tract. A great many men think that the infection is straight up the common duct. Dr. A. O. J. Kelly, in December, 1905, stated that infection does not, contrary to the opinion at that time, ascend directly from the duodenal and gastric area through the common duct into the liver, and there are good reasons for accepting this. Infection never takes place by bacteria going against the stream. If it cannot take place against the stream in the lymph-vessels, how can it take effect against the stream in cases of the ureter, or the common duct? It cannot do it.

Bond, of Leicester, England, has conducted a remarkable series of experiments which have been repeated and found to be true. He discovered that in vesical fistulas, indigo blue placed at the opening of the fistula below can be found afterward traveling up the urethra and appearing at the meatus. He said that it was not a capillary affair, because it did not appear in dead tissue, only in the living.

### Surgery of These Lesions

Dr. John B. Murphy: The experiments of Dr. Rosenow give us a new light, a clearing up of the connection between the primary infection manifestations and the secondary metastatic lesions. The surgeon's role in this class of case is necessarily small, but in 1902, when we first insisted that these arthritides were metastatic manifestations of infections in other positions in the body, it was considered very doubtful that that would be finally sustained; but we were positive, because there was such a clean-cut definite relationship in the cycle of metastases between the primary infection and the secondary manifestation in the way of an arthritic inflammation. When you see in a ward two, four, six, eight or ten of these cases with secondary joint manifestations, and in each case you can trace it back to practically the same position in the body, a chronic lesion of a definite type, you cannot fail to accept the primary lesion with the secondary lesion.

In the early fall we have our annual crop of spondylitides, each patient describing his attack in the same way, associated with types of infection of the same character, and giving fixation of the spine which looks as though the parts had been cemented together. The ossification which cements these bodies together is merely a continuation of the embryologic process of ossification in the joints of the long bones, and that deposit is taking place in the connective tissue. Finally, you have a solid, compact, bony mass, a complete ossification. All of that forced us to believe and insist that the primary lesion was an infectious one, and that the secondary lesion in the shaft was purely a metastatic manifestation of it. Then we asked ourselves, What rôle can the surgeon play? Dr. Billings has suggested to-night that the surgeon can restore the dislocated joints. That is not to be the rôle of the surgeon. We have insisted that the arthritides have a definite surgical local treatment. Furthermore, as the disease advances our limitations become more and more pronounced until there is nothing to do but the crude carpenter-work of reconstruction. But in the early stage of the disease there is a local treatment, a surgical treatment, and up to the time of the vaccine treatment it has been the only treatment that has availed anything.

What do you find on looking into these joints after an acute infective process has passed? Often just a local area of necrosis or ankylosis, no larger than a nickel. That is, in cases in which the manifestation is associated with an infection and the "rheumatism" is not initiated by a chill. When the "rheumatism" is initiated by a chill, which shows the virulence of the infection, whether due to a mutation of the diplococcus or to what we have no certain knowledge of, we have learned that an ankylosis in the whole of the joint is the rule, great enough to destroy, not the small area, but all that synovial membrane.

By means of experiments with the possible neutralization of the virulence of this material we are hoping to find some medicament which will destroy that, but until this is found let us take advantage of what we know in the way of stimulating phagocytosis. Thirty years ago Carlos by injections produced abscesses in different parts of the body which were known as concentrating abscesses. His clinical observation showed nothing at all about phagocytosis. He found that if, in an acute infection of the knee, in the hip or in some portion of the body a local abscess is produced, a rapid subsidence of the fever will result, and the patient will rapidly recover. What did that mean? It meant exactly what I can demonstrate any day, that injecting 20, 30, 40 or 50 minims of turpentine under the skin causes an abscess to form rapidly, and while it is forming there will be a great increase in general leukocytosis, and any infective process will be influenced by the formation of the abscess, which, you understand, is not a microbic, but a chemical abscess, which produces a constitutional leukocytosis.

What can we do in regard to the joints? Two things. We can stimulate the local resistance in the acute infections by producing an infiltration of the tissue within the joint. We can stimulate constitutional resistance by injecting into the joints something which causes not only a local increase in the polynuclears in the joint, but also a constitutional increase. During the inflammatory process the intra-articular pressure may be prevented by making extension. If we can do this, we shall stop the destruction in the joint or limit it to a very marked degree. We have demonstrated that again and again. Can we do this thing with the chronic varieties of infection? No. But we can do something with them. During the inflammatory process luxation must not be permitted to take place and deformity must not be permitted to occur. It is not necessary that deformities should occur. I feel that the treatment of joints is a prophylactic one, and not a therapeutic one—the joints must not be permitted to deform in the beginning, and then we shall not need to operate later to correct deformities.

## CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

*Fourth Annual Session, held in Chicago, Nov. 10-15, 1913*

*(Continued from page 1929)*

### Further Observations on Chronic Intestinal Stasis

**Sir Arbuthnot Lane**, London: One case taught me how a patient may lead an active and happy life with only a small portion of the jejunum left after operation. In this case I removed a large portion of the jejunum, after which the patient gained rapidly in weight and strength. Several patients have attempted suicide on account of chronic intestinal stasis, and in all such cases the removal of the large bowel has restored the sufferer, not only physically, but mentally. In 106 cases in which I have performed the short-circuiting operation for chronic intestinal stasis, there have been four deaths.

### Relation of the Ductless Glands to the Work of the Surgeon

**Dr. Roswell Park**, Buffalo, N. Y.: The internal secretions, so often spoken of as hormones, exercise an apparently controlling influence on many of the organs and functions, not alone on the ordinary bodily functions, but also on the nutrition and regulation of individual organs and their particular activities, even to the extent of becoming responsible for the development of certain mental traits or personal characteristics which may make or mar the individual, and may thus affect both his physical and intellectual welfare.

The hypophysis is a persistent organ and, therefore, must have throughout life a continued function. Extracts of the whole gland increase blood-pressure, cause uterine contraction, increase peristalsis, lower carbohydrate assimilation, and have a mydriatic effect. Used to excess they cause emaciation, degeneration of the liver and increased metabolism. Extirpation produces in animals a peculiar cachexia, reduced pulse-rate and respiration, fibrillary tremors, and death from apathy and coma. The overgrowth of the pituitary sometimes occurring after typhoid is to be considered as the result of toxins which stimulate its growth, as well as perhaps that of the epiphyseal bony borders, thus accounting for excessive overgrowth after this fever. Something of the same kind is often seen after marriage, when the stimulation of the sex glands seems to extend in a short time to the hypophysis.

The thyroid was once regarded as a reservoir, by means of which blood-pressure in the brain was equalized. It seems to have an influence on the formation of the blood, slightly resembling the action of the spleen, possibly vicariating for it. Its most important task appears to be elaboration of iodothyrin. Certainly iodin is its most important constituent, and in this the thyroid is richer than any other organ.

The parathyroids have only within late years been given their proper consideration. It is generally believed that nearly all cases of tetany in man are of thyroidal origin, and due to defective function and consequent evidences of hypoparathyroidism. The thymus seems to have much to do with the development of the entire bony system; when its activity is reduced ossification is much interfered with, and sometimes it fails utterly.

### A Summing-Up of the Goiter Question

**Dr. Charles H. Mayo**, Rochester, Minn.: Various enlargements of the thyroid are the result of temporary excessive physiologic demands, as at puberty, pregnancy, infection, menstruation, etc. Many goiters of the simple and mild exophthalmic type undoubtedly recover spontaneously and, in many instances, various forms of medical treatment may hasten the recovery and restoration of the gland to an apparently normal condition. Simple goiters of long standing are often thrown into degeneration by giving iodin, causing thyrotoxicosis but not exophthalmos, although some symptoms are the same in these two forms of toxic goiter. Encapsulated adenomas and simple colloid goiters which have resisted treatment are in most instances best treated by removal of enough of the gland to remove the disease. In simple goiter the more enlarged lobe should be extirpated; encapsulated adenomas should be enucleated and thyroids which are bilaterally enlarged should have double partial resections with division of the isthmus. Exophthalmic goiter is essentially a disease chronic in character, presenting exacerbations and ameliorations of symptoms extending through a period of months or several years. While this disease is amenable to surgical treatment by the removal of a large part of the hypersecreting gland, this procedure should by no means be considered emergency surgery, and during exacerbations all cases should be considered medical. Surgery is indicated during the upward wave of improvement. Extreme conditions, especially dilatation of the heart, may require preparation medically before instituting operative interference, and this should be confined to a preliminary ligation of the left upper pole. Should reaction follow this, ligation of the right upper pole is indicated a week later and thyroidectomy reserved until the patient has gained in weight and general health. Otherwise thyroidectomy is made at a second operation.

*(To be continued)*

# Current Medical Literature

## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Medical Sciences, Philadelphia

*November, CXLVI, No. 5, pp. 625-780*

1 Clinical Features of Cases of Subacute Bacterial Endocarditis That Have Spontaneously Become Bacteria-Free. E. Libman, New York.
2 Noguchi Luetin Reaction in Syphilis. G. B. Foster, U. S. Army.
3 *Dorsal Percussion in Enlargements of Tracheobronchial Lymph-Nodes. J. C. Da Costa, Philadelphia
4 Transmissibility of Lepra Bacillus by Bedbug (Cimex Lectularius L.). A. J. Smith, K. M. Lynch and D. Rivas, Philadelphia.
5 [illegible] Autopsy Findings in Two Cases. O. [illegible]
6 [illegible] Diagnosis and Treatment, with Reference to Laboratory Methods. B. A. Thomas, Philadelphia.
7 *[illegible] of Case of Bronchial Asthma. L. F. [illegible]
8 [illegible] (Pseudohypertrophic Muscular Dystrophy in Combination with Degeneration in Central Nervous System). C. D. Camp, Ann Arbor, Mich.
9 *Two Instances of Chronic Family Jaundice. A. H. Hopkins, Philadelphia.
10 Clinical and Metabolic Studies of Case of Hypopituitarism due to Cyst of Hypophysis with Infantilism of Lorain Type (So-Called Typus Froehlich or Adiposo-Genital Dystrophy of Bartels). D. Stetten, New York, and J. Rosenbloom, Pittsburgh.
11 Diagnosis of Gastric Ulcer. J. R. Verbrycke, Washington, D. C.

**3. Dorsal Percussion in Enlarged Tracheobronchial Lymph-Nodes.**—The eighteen case histories taken as the basis of Da Costa's report were selected from a series of thirty-eight mediastinal cases which afforded definite vertebral percussion findings. They represent, he says, typical examples of these signs, depending wholly on the adenopathies in question and not on the limited pleuropulmonary lesions coexisting in a few instances. No case of enlarged bronchial lymph-nodes associated with some other large mediastinal mass (i. e., carcinoma, fibroma, gumma) has been included in the summary, in order to rule out, so far as possible, extensive neoplastic tumors as potential factors of the spinal changes noted.

The individual vertebral physical signs of the eighteen tracheobronchial cases are summarized and charted according to the following groups: 1. Interscapular dulness, above the level of the inferior scapular angles, or over the first seven thoracic spinous processes. 2. Intrascapular dulness, below the level of the inferior scapular angles, or over one or more of the five lower spinous tips. 3. General thoracic hyperresonance over the entire thoracic segment. 4. Normal percussion signs over the entire thoracic segment. In simple enlargement of the tracheobronchial lymph-nodes percussion of the thoracic vertebrae, especially above the level of the inferior scapular angles, usually affords tonal changes of real clinical value if properly interpreted. These changes, more often corroborative than primarily diagnostic, invariably should be correlated with the mural signs of the individual case.

Hyporesonance with maximum tactile resistance and hyperresonance with minimum tactile resistance, Da Costa claims, may have precisely the same significance in uncomplicated adenopathies. To explain this seeming paradox it is to be assumed that in the former instance the mass exerts a dulling pressure, and that in the latter it conducts the predominant tracheal tone. In nodular enlargements associated with pleuropulmonary lesions, emphysema and pleural adhesions are to be reckoned with as additional factors of hyperresonance and hyporesonance, respectively. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect the vertebral percussion sound to a minor degree and more often produce dulness than hyperresonance. This general rule has a restricted clinical bearing in differentiating adenoid and malignant tumors. In routine examinations, Da Costa prefers ordinary mediate finger percussion to instrumental pleximeter percussion in studying vertebral changes of sound. The latter method, he says, gives no surer clue to tonal changes than that afforded by percussion with the bare fingers, and its practice obviously forbids all judgment of tactile resistance.

7. **Bronchial Asthma.**—In a patient with severe and repeated attacks of asthma seen by Warren, the pulmonary distention continued for several weeks after a cessation of a prolonged attack. This distention caused the heart to assume a vertical position, but did not influence its surface area. During the attack of asthma the diaphragm moved but slightly, and movements in reverse of the normal were observed. In explaining such reversed movements, however, one must take into account the excessive thoracic movements which act on the diaphragmatic attachments. The movements of these attachments may more than neutralize the movements due to the diaphragmatic contractions, so that the crests of the diaphragm may seem to execute reversed movements.

9. **Chronic Family Jaundice.**—A summary of Hopkins' cases is as follows: The jaundice was in every instance chronic, non-obstructive, and familial in type. In the first family, it extended over three generations, four members of which had had attacks of varying severity, and the attacks were more frequent and more severe in youth. The spleen was enlarged in each attack, at which times there was a moderate degree of anemia. Throughout the course of one case which Hopkins was able to follow more closely than any of the others, the fragility of the red blood-cells ran *pari passu* with the "bilious attacks" and the increase in intensity of jaundice. A second case did not show any increase in fragility, nor did the fourth case, both of which had been free of attacks for some time. The third case showed a lessened resistance of red cells up to 0.54 per cent. NaCl. The second family presented interesting features, in that three generations were involved and no less than five children in one immediate family were subject to the condition at that time. Owing to the fact that most of the family were living in Canada and New England, Hopkins has been unable so far to carry out further studies on the individual cases. In one point Hopkins' findings do not confirm those of Tileston and Griffin, as he has found in the serum of three members of this group isohemolysins to be present in ten out of a series of nineteen experiments.

### Archives of Internal Medicine, Chicago

*November, XII, No. 5, pp. 485-612*

12 Cause of Specific Dynamic Action of Protein. G. Lusk, New York.
13 *Sources of Error in Use of Stomach-Tube for Diagnosis. T. W. Harmer and W. J. Dodd, Boston.
14 *Thrombosis. L. Aschoff, Freiburg, Germany.
15 *Blood-Pressure in States of Excitement and Depression. M. C. Hawley, Watertown, Ill.
16 *Age Incidence in Carcinoma. C. V. Weller, Ann Arbor, Mich.
17 *Heredity with Reference to Cancer. A. S. Warthin, Ann Arbor, Mich.
18 Clinical Study of Vagotonia. A. H. Hopkins, Philadelphia.
19 Experiences with Prophylactic Typhoid Vaccination: Its Effect on Menstruation. A. R. Lamb, New York.
20 *Hexamethylenamin: Liberation of Formaldehyd and Antiseptic Efficiency under Different Chemical and Biologic Conditions. P. J. Hanzlik and R. J. Collins, Cleveland.

13. **Stomach-Tube for Diagnosis.**—The unaided stomach-tube occasionally fails to detect gastric stasis which is demonstrable with the bismuth meal and Roentgen ray. Curious to determine the cause of this inefficiency of the stomach-tube, Harmer and Dodd were led to watch by means of the fluoroscope, the course taken by the tube. They observed in several individuals that the end of the tube did not pass directly to the most dependent portion of the stomach. In these cases, the tip of the tube first touched a portion of the stomach wall well above the most dependent portion. As more tube was passed, the end of the tube slid along the wall of the stomach a greater or lesser distance and became impinged against the stomach wall. On further passage of the tube, the end remained fixed and a downward bowing of the tube into the lower portion of the stomach occurred. This downward bowing of the tube apparently diverted the direction of force on the tip of the tube; for, as more tube was passed and the dependent loop of tube increased in size, the tip sooner or later slipped from its fixed position. The force on the tip was then upward through the dependent loop of tube and consequently the tip slipped upward toward the cardia; that is, it became further removed from any residuum which may have been present in the stomach. On passing still more tube, the end may follow about the wall of the stomach and may eventually reach its most dependent portion. They also observed, however, that it may again curve horizontally and then upward. The tip of the tube may skim the surface of the residuum and therefore drain only a portion of it. Further passage of the tube in the hope of reaching a deeper level of the contents may fail, because the tip may curve upward. The result in such cases may not be seriously deceptive. The degree of stasis may be underestimated, but the analysis of the siphoned contents may show stasis. In some instances, however, considerable amounts of residuum may entirely escape detection by the tube.

14. **Thrombosis.**—Different poisons, whether hemolytic in action or not, Aschoff maintains, bring about distinctive forms of capillary thrombosis, among which can be differentiated the following types: Blood-Platelet Thrombosis: This arises by intravenous injection of a homologous serum, of solutions of hemoglobin and stromata from homologous blood, of heterologous serums, ether, glycerin, distilled water, India ink, collargol and olive oil. The thrombi arise in the capillaries of lungs, liver and spleen. Thrombosis from Blood-Stromata: This occurs in pure form only, when very marked hemolysis occurs in the blood-stream as a result of the action of hemolytic agents. Otherwise it occurs only in conjunction with blood-platelet thrombosis. Thrombosis from Fragments of the Blood Elements (*Bluttrümmerthrombose*): Disintegration of the elements of the blood occurs by introduction of ricin, bacterial toxins, etc., which destroy the leukocytes, lymphocytes, macrophages of the spleen, liver and bone-marrow. The fragments, in conjunction with scanty fragments of erythrocytes, roll themselves together to form thrombi in the spleen and liver. Fibrin is then subsequently deposited there. Leukocytic Thrombosis: The polymorphic and mononuclear leukocytes phagocyte the foreign elements introduced into the blood-stream, and are stopped and held back in the capillaries of the internal organs, especially the lungs, spleen and liver, so that a leukopenia results in the peripheal circulation. This process is especially brought out by bacteria, but also by various indifferent foreign substances like particles of ink and starch. Fibrin Thrombosis: Although by injecting stromata or foreign serums the coagulability of the blood can be increased, no deposit of fibrin occurs. Deposit of fibrin occurs only secondarily, as a sequel of the types of thrombosis already described.

Aschoff claims that neither endothelial damage, on which so much stress was previously laid, nor a direct coagulation of the blood, play any rôle. Only two reasons for the thrombosis require to be considered, and their merits weighed one against the other; they are, the changes in the blood elements themselves, and the slowing of the blood-stream. Neither of these two factors can be excluded, as even in the experiments where thrombi of different sorts are produced by heightening the agglutinability of the blood-platelets by the disintegration of white or red corpuscles, these thrombi can occur only where normally a marked slowing of the blood-stream is present; for example, in the capillaries of the lungs, liver and spleen. But even by very marked destruction of the blood elements it is impossible to produce thrombi by deposition in the larger veins when no slowing of the current occurs. An additional factor, therefore, needs to be considered, especially in cases in which the thrombi are localized in the large veins, and where the above-mentioned capillary regions of the lungs, liver and spleen generally implicated in toxic thrombosis remain free. In such a case the increased agglutinability of the blood-platelets cannot be the direct exciting cause, but a definite and recognizable slowing of the blood-stream must first of all occur.

The slowing of the blood-stream and the alteration of the blood elements themselves, especially alterations of the platelets, are the chief factors in the production, not only of the static, but of toxic thrombosis. In static and similar types of thrombi the slowing of the blood-stream is of prime importance, while for the toxic varieties the changes in the blood elements have the dominating influence.

15. **Blood-Pressure in States of Excitement and Depression.**—Hawley found that cases of mania show typical features in the tracings which are taken, and these are probably due to an altered state of vasomotor tonicity in keeping with the other motor phenomena in these cases. These features are large amplitude of the curve, rapid action and short interval between beginning of the oscillation and full amplitude. The blood and pulse-pressures are raised and are more marked, as are the other features just spoken of, as the restlessness becomes more marked. All decrease as the patients recover. In non-productive cases these features are much diminished, but still demonstrable. Arteriosclerosis existing in maniacs raises the blood- and pulse-pressure still higher. The usual features of the maniac tracing are as apparent here as in cases without arteriosclerosis, and the larger amplitude, rapid action and early onset in the tracing are not features of the sclerosis, but of the maniac state. In cases of sclerosis occurring in other types of psychosis these features are lacking.

In stuporous cases the blood- and pulse-pressure are quite low. The amplitude is quite small and action is slow and tedious. This seems to indicate a condition of relaxation of the blood-vessels, in keeping with the other phenomena exhibited. In depressed cases the blood- and pulse-pressures are lower than in the maniac states, but higher than in the stuporous states. The amplitude of the wave, its onset and rapidity is less than in the manic states, but higher than in the stuporous states. Any rise in any of these things is due either to muscular resistance or physical disease and not to any state of mind.

In melancholia the average blood-pressure is relatively high, for the patients are among those in middle life. The blood-pressure and pulse-pressure are near normal as long as there is no muscular resistance, and no other factor, such as arteriosclerosis, to produce a rise. The tracings show nothing peculiar, except when these factors are added, and then blood-pressure is raised; the amplitude of the wave is also slightly increased. By taking many readings it may be possible to attribute high blood- and pulse-pressures in some cases to the varying effect of arterial and kidney disease on peripheral resistance rather than to the effect of the mental condition. In other cases resistance on the part of the patient is a factor in raising the pressure—a fact which might be overlooked had only one reading been taken at such a time.

16. **Age Incidence in Carcinoma.**—An analysis of over 1,100 microscopically verified cases of carcinoma by Weller showed that the incidence of carcinoma is greatest at the age period of 58 to 62. After this period the carcinoma incidence decreases. Carcinoma incidence in women runs a definite cycle which is roughly parallel to that in men, but precedes it by five to ten years. The earlier age for the phases of the curve for women is largely due to the earlier appearance of carcinoma of the breast and uterus as compared to other varieties of carcinoma.

17. **Heredity and Carcinoma.**—During eighteen years, 3,600 cases of neoplasm of all varieties were studied by Warthin either in material taken for practical diagnosis or obtained by necropsy. Of these 3,600 cases, some 1,600 were cases of carcinoma, as was shown by the microscopic diagnosis. About one thousand of these gave fairly good family histories with the ages of the members. A smaller number (30 per cent.) gave detailed histories. From this number are taken the families which show multiple occurrence of carcinoma. In many of these all of the members of the family for three generations are given; in others, the records are incomplete. Four families give complete records of the descendants of the cancerous grandparent. The incidence of cancer in these families is so striking that it can be interpreted as showing an inherited susceptibility to cancer.

Warthin believes that a marked susceptibility to carcinoma exists in the case of certain family generations and family groups. This susceptibility is frequently associated with a marked susceptibility to tuberculosis, and also with reduced fertility. The multiple occurrence of carcinoma in a family generation practically always means its occurrence in a preceding generation. The family tendency is usually more marked when carcinoma occurs in both maternal and paternal lines. Family susceptibility to carcinoma is shown particularly in the case of carcinoma of the mouth, lip, breast, stomach, intestines and uterus. In a family showing the occurrence of carcinoma in several generations there is a decided tendency for the neoplasm to develop at an earlier age in the members of the youngest generations. In this case the neoplasm often shows an increased malignancy. Because of the difficulty of obtaining complete family records, Warthin says, the laws of inheritance of carcinoma susceptibility cannot be determined accurately, and it is highly desirable that investigations of large family records should be made relative to the occurrence of carcinoma susceptibility. In Levin's study of cancerous fraternities in connection with the whole family history the percentage of cancerous members in each cancerous fraternity corresponds very closely to the Mendelian percentage of members with recessive unit-characters in a hybrid generation. The same conclusion might be drawn from Warthin's cases in certain instances, but it does not seem to him that the data are sufficient for such conclusions. He himself does not consider this conclusion as final. Levin also concludes that resistance to cancer is a dominant character whose absence creates a susceptibility to cancer. While some of Warthin's cases show a family history suggesting this, others would indicate a progressive degenerative inheritance—the running-out of a family line through the gradual development of an inferior stock, particularly as far as resistance to tuberculosis and cancer is concerned.

20. **Hexamethylenamin.**—The authors summarize the results of their work as follows:

1. The phloroglucin test is the most delicate and most useful test for free formaldehyd.
2. Alkalies prevent, while acids facilitate the liberation of formaldehyd from hexamethylenamin in all body fluids.
3. The liberation of formaldehyd from hexamethylenamin in pathological fluids obeys the same laws as in other solutions; that is, it can only occur in acid reaction. Even when 0.5 per cent. hexamethylenamin was added to them, not enough formaldehyd was liberated to be bactericidal.
4. Hexamethylenamin itself is not bactericidal.
5. Liberation of formaldehyd from hexamethylenamin depends on the excess hydrogen ion concentration of the solution above the neutral point.
6. Previous investigations leave us in doubt as to the behavior of hexamethylenamin in the body.
7. After administration, hexamethylenamin is present, but does not liberate free formaldehyd in blood, cerebrospinal, pleural, pericardial and synovial fluids, vitreous and aqueous humors, and urine when truly alkaline. Formaldehyd is liberated in urine which is truly acid, and in the acid gastric contents.
8. Administration of monosodium phosphate with hexamethylenamin renders the urine acid and facilitates the liberation of formaldehyd.

9. The administration of alkali with hexamethylenamin renders the urine alkaline and inhibits the liberation of formaldehyd.

10. The beneficial therapeutic effects of hexamethylenamin depend on the liberated formaldehyd. Such effects are to be expected principally, if not always, in acid urine only. It is irrational to prescribe alkalies (bicarbonate and citrate) together with hexamethylenamin.

### Boston Medical and Surgical Journal

*November 13, CLXIX, No. 20, pp. 701-740*

21 Nutrition of Anemic and Tuberculous Children. E. A. Locke, Boston.
22 *Carcinoma of Rectum. D. F. Jones, Boston.
23 *Artificial Pneumothorax in Treatment of Chronic Infection of Pleura and Lungs. C. Floyd, Boston.
24 Better Training of Nurses in Insane Hospitals. W. Channing, Brookline, Mass.
25 Case of Orthostatic Albuminuria Treated by Exercise. H. J. FitzSimmons, Boston.

22. **Cancer of Rectum.**—The operation of choice in cancer of the rectum in Jones' opinion is an abdominosacral, rather than an abdominoperineal operation. He has determined on a two-stage operation in a few of the cases. This consists in:

*First Stage.*—The inferior mesenteric is tied just below its junction with the aorta. The mesentery of the sigmoid is separated from the posterior wall, the ureters identified, and the rectum, with all the pelvic fat, is separated in one mass down to the tip of the coccyx posteriorly, while anteriorly it is separated from the bladder, or vagina. After separating the bowel in this manner, it is held forward and the peritoneal flaps brought together behind it. Instead of dropping the sigmoid back into the abdominal cavity, the upper portion is brought out through a rectus incision, and a Lilienthal colostomy done, great care being used not to injure the vascular arches in the mesentery. After twenty-four hours, the colostomy is opened and the distal portion cleansed by frequent washing, both from below and above.

*Second Stage.*—After five to seven days, the sacral portion of the operation is carried out as in the single stage operation. The sigmoid is cut off as high as possible in the pelvis, and the proximal end inverted and left as an appendage to the colostomy. Jones has carried out this two-stage operation with excellent immediate results in two cases. If the carcinoma is sufficiently high to make a resection and suture desirable, or if it is desired to bring the end of the sigmoid down through the sphincter, the inferior mesenteric should be tied in the usual way, and the whole sigmoid and rectum freed from the posterior wall and pelvis, as in a single stage operation.

The peritoneal flaps, which have been turned back, are then sutured together close about the freed rectum, and the abdomen closed. In from four to seven days, the posterior operation is carried out, the growth and a sufficient length of rectum above and below the growth is excised with the whole inferior mesenteric artery, and the fat surrounding it. An end-to-end suture is then done or the end of the sigmoid is brought through the sphincter. Jones is convinced that spinal anesthesia is essential in the combined abdominosacral operation, if the mortality is to be kept down.

23. ***Artificial Pneumothorax in Chronic Infection of Pleura and Lungs.***—After some experience with the method of artificial pneumothorax in the treatment of pulmonary pneumothorax, Floyd is struck with the relatively small number of those afflicted that are really suitable cases for this treatment. Well marked or advanced strictly unilateral cases are not especially common even in large clinics for pulmonary tuberculosis, and some observers believe that such cases are always bilateral. If this type of case is strictly adhered to, Floyd says, the results obtained where the method is carried out conscientiously will be uniformly good, and the percentage of patients markedly improved or even arrested will be as large as 40 per cent. or 50 per cent. If, on the other hand, as is the tendency with most men, almost any otherwise hopeless case in which satisfactory compression can be obtained, is given a chance of obtaining relief at least from persistent symptoms, the results will not be brilliant, and Floyd believes not more than 5 or 10 per cent. possibly of such cases will be arrested. Artificial pneumothorax, he believes, will be of real aid in the chronically recurring tubercular pleural effusion, and in some cases of bronchiectasis and pulmonary abscess in which the inflammatory conditions to be met are not too extensive. But even if this group of diseases may be benefited by the use of this method, its field in the treatment of diseases of the chest will still be relatively a narrow one. It is most applicable where the patient is under the supervision of hospital or sanatorium management, and has failed to do well with the older and well established methods.

### Canadian Medical Association Journal, Toronto.

*October, III, No. 10, pp. 885-930*

26 *Series of Abdominal Cesarean Sections. F. Fenton, Toronto.
27 *New and Rational Method for Study of Functional Diseases of Nervous System. G. W. Howland, Toronto.
28 Treatment of Tubercular Spondylitis or Pott's Disease. W. G. Turner, Montreal.
29 Running Suture and Bloodless Operation. F. N. G. Starr, Toronto.
30 *Clinical Aspects of Regeneration of Bone, as Manifested by Study of Union of Fractures. E. S. Ryerson, Toronto.
31 Epidemic of Jaundice. M. Mackay, Sherbrooke, Que.

26. **Series of Abdominal Cesarean Sections.**—Of the twenty-six operations performed by Fenton, sixteen were done because of obstruction to delivery owing to contractions in the bony pelvis; six were done on account of antepartum hemorrhage with undilated os; and one each for eclampsia at term, large baby, and stenosis of soft tissues; one case is unclassified owing to loss of history. Five cases were second operations on the same patient and two patients have subsequently delivered themselves unaided. All of the children were delivered alive and all but three left the hospital in good condition. The three died during the first two or three days from prematurity. One mother died, but it might fairly be claimed that her death was not due to operation. All of the cases might be classed as primary operations in that they were either done before the membranes had ruptured or before any attempts had been made *per vaginam* at delivery, or more than one or two vaginal examinations made and those under the strictest precautions

27. **Functional Diseases of Nervous System.**—Howland pleads that the terms neurasthenia and hysteria should not be used as diagnostic conclusions but should be entirely omitted, and that the general functional disturbances of the nervous system should be classified according to cause.

30. ***Regeneration of Bone.***—Ryerson's argument is this: If the periosteum were osteogenetic, then new bone would be produced beneath it over the area where it is stripped up from the bone and the osteoperiosteal angle would be one of the first parts to be filled up. That this is not the case, he claims, is manifested by his plates which show that the osteoperiosteal angle is actually the last part of the space to be filled with a shadow, indicating new bone formation. From this, therefore, his inference is that the periosteum is not osteogenetic in character.

### Georgia Medical Association Journal, Augusta

*November, III, No. 7, pp. 215-250*

32 Problem of Social Evil Considered in Its Social and Medical Aspects and in Relation to Problem of Race Betterment. J. E. Mears, Philadelphia.
33 *Chronic Nephritis Dietetics and Treatment. R. F. Wheat, Amsterdam, Ga.
34 *Prolonged Rest and Simple Diet in Treatment of Bright's Disease. H. F. Harris, Atlanta.
35 *Intestinal Hemorrhage in Typhoid. T. D. Coleman, Augusta.
36 Postoperative Ileus, with Report of Cases. W. L. Cooke, Columbus.
37 Eclampsia. H. W. Birdsong, Ashland.

33, 34 and 35. Abstracted in The Journal, May 31, pp. 1732 and 1733.

### Illinois Medical Journal, Chicago

*November, XXIV, No. 5, pp. 261-320*

38 Auricular Fibrillation. F. Tice, Chicago.
39 Failures and Successes in Diagnosis and Surgical Intervention of Some Intracranial Diseases. J. C. Beck, Chicago.
40 Electrically Propelled Rotary Chain-Saw and Automatic Trephine with Accessory Instruments. E. J. Hoglund, Chicago.
41 Roentgenoscopy of Gastro-Intestinal Motility. C. A. Elliott, Chicago.
42 Compulsory Sterilization and Segregation of Mental Defective. H. M. Carey, Odessa, Del.

43 Inheritance of Some Elements of Hysteria. C. B. Davenport, Cold Spring Harbor, N. Y.
44 Hexamethylenamin in Ophthalmology. H. S. Gradle, Chicago.
45 Rôle of Tarsus in Trachoma. H. W. Woodruff, Joliet.
46 Relation of Local Disease of Ear to Systemic Disease. G. C. Otrich, Belleville.
47 Relation of Eyes to Nose and Accessory Sinuses in Disease. L. J. Hughes, Elgin.

### Iowa State Medical Society Journal, Washington

*November, III, No. 5, pp. 279-336*

48 Mechanical or Forcep Delivery. N. C. Morse, Eldora.
49 Simple Method of Catheter Retention after Suprapubic Cystotomy. L. Schooler, Des Moines.
50 Use of Subconjunctival Injections in Treatment of Eye Disease. L. Weber, Davenport.
51 Surgical Physiology. J. T. McClintock, Iowa City.
52 Prophylaxis of Insanity. M. E. Witte, Clarinda.
53 Clinical Significance of Reflexes. T. B. Throckmorton, Des Moines.

### Journal of Biological Chemistry, Baltimore

*November, XVI, No. 2, pp. 187-330*

54 *Fate of Protein Digestion Products in Body: Determination of Amino Nitrogen in Tissues. D. D. Van Slyke, New York.
55 Idem: Absorption of Amino-Acids from Blood by Tissues. D. D Van Slyke and G. M. Meyer, New York.
56 *Idem: Locus of Chemical Transformation of Absorbed Amino-Acids. D. D. Van Slyke and G. M. Meyer, New York.
57 Idem: Effects of Feeding and Fasting on Amino-Acid Content of Tissues. D. D. Van Slyke and G. M. Meyer, New York.
58 *Influence of Salts Common in Alkali Soils on Growth of Rice Plant. K. Miyake, Sapporo, Japan.
59 Determination of Oxybutyric Acid. P. A. Shaffer and W. M. Marriott, S. Louis.
60 *Determination of Acetone. W. M. Marriott, St. Louis.
61 Nephelometric Determination of Minute Quantities of Acetone. W. M. Marriott, St. Louis.
62 Determination of B-Oxybutyric Acid in Blood and Tissues. W. M. Marriott, St. Louis.
63 *Endogenous Metabolism of Pig as Modified by Various Factors: Effects of Acid and Basic Salts, and of Free Mineral Acids on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison, Wis.
64 *Idem: Influence of Fat Feeding on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison, Wis.
65 *Idem: Influence of Benzoic Acid on Endogenous Nitrogen Metabolism. E. V. McCollum and D. R. Hoagland, Madison.
66 Non-Interference of "Ptomains" with Certain Tests for Morphin. J. Rosenbloom and S. R. Mills, Pittsburgh.

54. **Amino Nitrogen in Tissues.**—Van Slyke's work was done as follows: The amino-acids are extracted from the tissues with hot water. Uncoagulated proteins in the extract are precipitated by alcohol. Alcohol and the slight amount of ammonia present in the extract are removed by concentration in vacuum, and the amino nitrogen in the residue is determined by the nitrous acid method. The rapidity with which the amino nitrogen reacts with nitrous acid, and the relatively small increase which it shows as the result of hydrolysis of the extract with hydrochloric acid, indicate that the amino nitrogen determined by the method outlined represents approximately the *free a-amino-acids*. Only a few per cent. of the amino nitrogen appears due to proteins or their intermediate products, and to amines not of protein origin. The correction for the latter can, when desirable, be readily determined.

56. **Transformation of Absorbed Amino-Acids.**—Van Slyke and Meyer show that the absorbed amino-acids (glycocoll, hydrolyzed casein, artificially digested flesh) disappear rapidly from the liver. The amino nitrogen content of this organ may be doubled by an injection of amino-acids into the general circulation, and yet return to normal within two or three hours. During the period required by the liver entirely to rid itself of absorbed amino-acids, their concentration in the muscles suffers no appreciable fall. From the other organs (kidney, intestine, pancreas, spleen) the absorbed amino-acids disappear less rapidly than from the liver, but whether as slowly as from the muscles has not yet been determined. The disappearance of amino-acids from the liver is accompanied by an increase in the urea of the blood. These results support the long contended view that the liver is the organ especially responsible for the catabolism of those protein digestion products not utilized for tissue construction.

The following explanation made by the authors as being consistent with the facts thus far ascertained. The amino-acids, with perhaps some peptides, from the intestine enter the circulation, from which they are almost immediately absorbed by the tissues. The power to take them up from the blood-stream is common to all the tissues, but is limited. The liver, however, continually desaturates itself by metabolizing the amino-acids that it has absorbed, and consequently maintains indefinitely its power to continue removing them from the circulation, so long as they do not enter it faster than the liver can metabolize them. When the entrance is unnaturally rapid or when the liver is sufficiently degenerated, as observed clinically in some pathologic conditions, the kidney assists in removing the amino-acids by excreting them unchanged. Death may result when the above agencies for preventing undue accumulation of protein digestion products are overtaxed. In regard to the synthesis of tissue proteins, the authors believe that, since each tissue has its own store of amino-acids, which it can replenish from the blood, it uses these to synthesize its own proteins.

58. **Influence of Salts on Growth of Rice Plant.**—The injurious effect of certain metallic ions on the growth of rice seedlings, Miyake says, may be perfectly counteracted only by the presence of calcium ions. Strontium ions can exert an influence only slightly retarding the toxicity of the metallic ions. Barium ion not only has no beneficial action, but a depressing effect is observed. Consequently, it is concluded that barium and strontium cannot replace the antagonistic action of calcium.

60. **Determination of Acetone.**—The author states that the Messinger method for acetone estimation gives correct results, whereas the Scott-Wilson method gives accurate results only when certain modifications in the original procedure are made. It is applicable to very minute quantities of acetone. Marriott found that in distilling a very dilute acetone solution, all of the acetone may be collected in the distillate within ten minutes.

63. **Endogenous Nitrogen Metabolism.**—Data are presented by McCollum and Hoagland which show that the endogenous metabolism of the pig reaches its lowest level when the animal has an abundant supply of carbohydrates together with a salt mixture of an alkaline character. The total output of nitrogen derived from endogenous sources can be greatly increased without changing the output of *creatinin*. The additional nitrogen which is eliminated on an acid over what appears on an alkaline diet is in the form of ammonia. The animal is not able to use the nitrogen of the urea fraction to neutralize the acids present in the diet, but draws additional nitrogen from the tissues for ammonia production.

64. **Idem.**—Feeding fat as the sole source of energy, it is claimed by McCollum and Hoagland, does not lead to a sustained rise in the nitrogen output of pigs which have been reduced to their lowest possible level of nitrogen metabolism by long continued starch feeding. Fat feeding may produce a considerable elimination of creatin. The total creatinin (creatinin + creatin) may be greatly increased without a corresponding rise in the total nitrogen output. The possibility of the acid or basic character of the ration having an influence on the creatin production is suggested.

65. **Idem.**—A considerable amount of the nitrogen which appears in the form of urea in pigs reduced to the endogenous level of protein metabolism, McCollum and Hoagland claim, may be converted into glycocoll when benzoic acid is fed, for the purpose of hippuric acid synthesis. When the quantity of benzoic acid ingested is not excessive, there is no noticeable rise in the total nitrogen excreted, over that which is eliminated on the same diet without benzoic acid. When the quantity of benzoic acid ingested is very large, there is a marked increase in the output of total nitrogen *catabolized*. The urea nitrogen cannot be reduced to a lower level than about 20 per cent. of the total. No change in the creatinin output is observed when the protein catabolism is stimulated by excessive doses of benzoic acid. Endogenous protein metabolism appears to consist of at least two types. One can be stimulated greatly for ammonia production by the introduction of mineral acids, or for hippuric acid when benzoic acid is introduced; the other, measured by creatinin, remains unaffected by methods described.

### Journal of Medical Research, Boston

*October, XXIX, No. 1, pp. 1-146*

67 *Distribution of Vital Stains in Animals with Inoculable Tumors. I. Levin, New York.
68 *Experimental Streptococcic Arthritis in Monkeys. O. M. Schloss and N. B. Foster, New York.
69 Action of Human Blood-Serum on Guinea-Pig Erythrocytes. W. T. Cummins, San Francisco.
70 *Presence of Tubercle Bacilli in Feces. A. T. Laird, G. L. Kite and D. A. Stewart, Trudeau, N. Y.
71 Cultural Amebae: Study in Variation. A. W. Williams and G. N. Calkins, Columbia, N. Y.
72 *Study of Experimental Nephritis Caused by Salts of Tartaric Acid. R. M. Pearce and A. I. Ringer, Philadelphia.
73 Morphology of Functional Depression in Nerve Cells and Its Significance for Normal and Abnormal Physiology of Cell. D. H. Dolley, Columbia, Mo.
74 *Thrombosis and Occlusion of Lymphatics. E. L. Opie, St. Louis.

67. **Distribution of Vital Stains.**—The results of Levin's investigation seem to indicate that the vital stains when introduced into an animal with an inoculable tumor do not show any specific distribution which would show a predilection for the cells of the inoculated tumors. The organ cells surrounding the tumor contain the normal quantity of the vitally stained cells, while the tumor itself either contains none or very few such cells. It is of interest, though, to note that of the two tumors used in this investigation the carcinoma did not show any of the vital stains while sarcoma showed a certain amount. Levin suggests that a chemical may influence one kind of tumor and not influence another.

68. **Experimental Streptococcic Arthritis in Monkeys.**—Inoculations of cultures of *Streptococcus pyogenes* into the blood-stream of four monkeys induced a polyarthritis, suggestive in certain respects of "rheumatic fever" in man. In three instances immunity to the infectious agent was observed after repeated inoculations. The infecting organism could be recovered from the blood-stream at the onset of symptoms, but not afterward. This fact possibly has some bearing on the failure to isolate organisms from the blood of man with "rheumatic fever." Recovery from the induced arthritis may be complete and in such cases no lesion is found in the joint or periarticular tissues at autopsy. Repeated inoculations of streptococci induced a chronic arthritis in two cases, which was manifested by limitation of motion and contracture. In these affected joints there was found at autopsy thickening of the periarticular structures, thickening of the synovial membrane with fibroid infiltration and fringes of tissue growing into the joint which suggest villous formation. There was in one case also erosion of the cartilages. These lesions are analogous with those found in some types of chronic arthritis in man. Agglomerations of specifically staining cells were noted in the heart muscle, kidney, liver, spleen and periarticular tissues.

70. **Tubercle Bacilli in Feces.**—The authors briefly summarize their work as follows: Nearly all patients with tubercle bacilli in their sputum also have virulent tubercle bacilli in their feces. Very few persons who do not have tubercle bacilli in their sputum have acid-fast bacilli in their feces.

72. **Experimental Nephritis.**—Pearce and Ringer found that the administration to the dog of tartrates, by mouth, intraperitoneally or subcutaneously, causes a severe renal disturbance characterized by albumin and casts in the urine and diminished flow of urine or complete anuria. The urine passed before complete suppression is water clear of low specific gravity, and the solid constituents are greatly decreased. The most striking histologic change in the kidney is necrosis of the convoluted tubules, with fatty changes in the loops of Henle and sometimes also in the collecting tubules. Exudative glomerular lesions occur in about half the animals with severe tubular lesions. The mode of administration does not influence the character of the renal lesion, except in as much as diarrhea, following administration by mouth, may cause rapid removal of the salt from the intestine, and thus by reducing the amount of absorption prevent the severer types of lesion.

74. **Thrombosis and Occlusion of Lymphatics.**—A number of experiments were performed by Opie to test the effect of different tissues on the coagulation of lymph. He found that the slow coagulation of lymph is hastened by the addition of thrombokinase, and thrombosis within lymphatic channels occurs when thrombokinase is liberated by the tissues in the wall of the lymphatic. Necrosis of cells in contact with the lymph-stream favors thrombosis within lymphatic vessels by bringing thrombokinase into contact with the circulating lymph. After ligation of large lymphatic channels thrombosis may be caused by the injection of bacteria (*Bacillus pyocyaneus, Staphylococcus pyogenes aureus*) into the blood or by infection of the tissues in the neighborhood of the lymphatic channel. Occlusion of the thoracic duct or of large lymphatic trunks is followed by transient edema which is relieved in part at least by the establishment of collateral lymphatic circulation. After ligation of the thoracic duct flow of lymph into the vascular system may be reestablished within from two to four days: (a) by formation of a new channel entering the proximal part of the ligated duct, or (b) by collaterals freely joining the right thoracic duct; (c) in other instances no reestablishment of communication with the vascular system could be demonstrated but there was no widespread edema. Copious chylous ascites may follow occlusion of the thoracic duct in association with injury to a mesenteric lymphatic vessel. In a few instances continued diarrhea follows occlusion of the thoracic duct.

### Journal of Outdoor Life, New York

*November, X, No. 11, pp. 321-350*

75 How to Win the Fight. E. J. Hoyt, Liberty, N. Y.
76 Doctor and Patient. E. R. Rémy, New York.
77 Anti-Tuberculosis Movement in Rio De Janeiro. T. B. Duarte, New York.
78 Magic Mattress. M. M. Ogilvie, Louisville, Ky.
79 Tuberculosis Nursing as Profession. M. F. Sloan, Towson, Md.

### Kentucky Medical Journal, Bowling Green

*November 1, XI, No. 22, pp. 925-966*

80 Symptomatology and Diagnosis of Gall-Bladder Disease. J. B. Lukins, Louisville.
81 Medical Treatment of Cholecystitis. W. F. Boggess, Louisville.
82 Indications for Surgery in Gall-Bladder Disease. L. Frank, Louisville.
83 Surgery of Gall-Bladder. J. D. Jackson, Danville.
84 After Treatment and End Results in Gall-Bladder Surgery. F. H. Montgomery, Danville.
85 Acute Anterior Poliomyelitis. W. L. Mosby, Bardwell.
86 Intestinal Parasites. T. A. Frazer, Marion.
87 Health [illegible] J. Andrews, Lexington.
88 Appendi[illegible] Cincinnati.

### Medical Record, New York

*November 15, LXXXIV, No. 20, pp. 875-920*

89 Rest and Exercise for Tuberculous and Predisposed Child at School. S. A. Knopf, New York.
90 Architecture of Open-Air Schools. J. V. Van Pelt, New York.
91 Premonitory Aurae in Inebriety. T. D. Crothers, Hartford, Conn.
92 Cases of Tumor of Lungs and Mediastinum Simulating Pulmonary Tuberculosis. W. H. Swan, Colorado Springs, Colo.
93 Pruritus Ani Pertinax. W. P. Cunningham, New York.
94 Value of Typhoid Vaccination in Civil Communities. R. E. Ebersole, Ellis Island, N. Y.
95 Transplantation of Bone for Flail Joint Produced by Inflammatory Destruction of Joint. A. O. Wilensky, New York.
96 Diphtheria Carrier Treated with Culture of Staphylococcus Pyogenes Aureus. I. E. Biskow, Chicago.
97 New Colostomy Apparatus. H. B. Delatour, Brooklyn.
98 Perineorrhaphy Retractor. A. Reich, New York.

### New York Medical Journal

*November 15, XCVIII, No. 20, pp. 945-996*

99 Family Substance and Theory of Coincident Disease in Blood Relations. B. Holmes, Chicago.
100 Medical Care of Aged. I. L. Nascher, New York.
101 Sexual Theories Formed in Early Childhood, and Their Rôle in Psychoneuroses. H. W. Frink, New York.
102 Ocular Vertigo. A. Bray, Philadelphia.
103 Vincula Praeteritorum. W. P. Cunningham, New York.
104 Laboratory Studies of Manic Depressive Group. J. A. Jackson, Philadelphia.
105 Charity: Some Thoughts on Its Use and Abuse. H. E. Tompkins, New York.
106 Blood-Letting Apparatus. E. C. Burrows, New York.
107 Clinical Observations on Cancer; Its Treatment and Cure by Chemicals Alone. K. F. Junor, Brooklyn.

### Northwest Medicine, Seattle, Wash.

*November, V, No. 11, pp. 299-328*

108 Some Features of Medical Practice. R. E. Ringo, Pendleton, Ore.
109 Cysts of Brain and Case of Cerebellar Cyst, with Pathology and Diagnosis. L. Selling and A. E. Rockey, Portland, Ore.
110 Tonsil Operation. S. E. Wright, Portland, Ore.
111 Nephritis. E. B. Pickel, Medford, Ore.
112 In[illegible] Related Methods of Diagnosis and [illegible] Tamiesie, Portland, Ore.

### Oklahoma State Medical Association Journal, Muskogee

*November, VI, No. 6, pp. 229-274*

113 Pathologic Thyroid Gland and Its Treatment. F. Y. Cronk, Guthrie.
114 Cholelithiasis, Cholecystitis and Cholangeitis. D. F. Stough, Geary.
115 Plea for More Rational Intervention in Obstetric Complications. W. A. Fowler, Oklahoma City.
116 Submucous Resection of Nasal Septum. W. A. Cook, Tulsa.
117 Treatment of Corneal Ulcers with Special Reference to Use of Methylene Blue. M. Wiener, St. Louis.
118 Pellagra; New Theory of Its Etiology. J. R. Callaway, Pauls Valley.

### Ophthalmic Record, Chicago

*November, XXII, No. 11, pp. 645-702*

119 Cataract Extraction with Conjunctival Bridge. R. S. Lamb, Washington, D. C.
120 Lid Elevator. W. A. Fisher, Chicago.
121 New Irrigation Basin. I. G. Clark, Columbus, O.
122 Existence and Prevalence of Trachoma among Indians of Northern United States and Canada. W. H. Harrison, Browning, Montana.
123 Case of Sarcoma of Orbit. C. E. Ide, Los Angeles.
124 Orbital and Ocular Neuralgia due to Dental Irritation. H. V. Würdemann, Seattle, Wash.

### West Virginia Medical Journal, Wheeling

*November, VIII, No. 5, pp. 143-178*

125 Pathology, Diagnosis and Treatment of Malignant Tumors of Breast. J. B. Deaver, Philadelphia.
126 Early Diagnosis and Treatment of Malignant Tumors. J. E. Burns, Wheeling.
127 Glaucoma. E. E. Gibbons, Baltimore.
128 Toxemia of Pregnancy, with Special Reference to Eclampsia. A. V. Weinberg, Wheeling.
129 Report of International Congress of School Hygiene. R. H. Edmondson, Morgantown.

### Wisconsin Medical Journal, Milwaukee

*October, XII, No. 5, pp. 131-170*

130 Pathologic and Therapeutic Possibilities of Upper Maxillary Contraction and Expansion. G. V. I. Brown, Milwaukee.

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## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

*November 1, II, No. 2757, pp. 1125-1192*

1 *Chronic Intestinal Stasis. W. A. Lane.
2 Idem. S. Bainbridge.
3 *Visceral Complications Met with in Hysterectomy for Fibroids. J. Bland-Sutton.
4 *Treatment of Spastic Paraplegia (Little's Disease). E. M. Little.
5 *Hereditary Transmission of Sarcoma. J. S. Manson.
6 *New Method of Dealing with Scars by Multiple Incision and Thiosinamin. A. H. Tubby.
7 School Clinics in Relation to Prevention of Myopia. J. Hern and A. F. MacCallan.
8 Criticism of Sight Tests of Board of Trade. F. W. Edridge-Green.
9 Treatment of Chronic Dacryocystitis. T. H. Butler.
10 Supercorneal Sutures and Operation for Conical Cornea. E. E. Maddox.
11 Nystagmus: One Hundred Cases, Chiefly Ordinary or Non-Miners' Nystagmus. J. A. Wilson.
12 Question of Excision of Eye in Cases of Injury. M. L. Hepburn, R. A. Greeves and S. H. Browning.
13 Persistence of Nerve Plexus of Iris after Excision of Certain Ganglia. W. B. I. Pollock.

1. **Chronic Intestinal Stasis.**—It is Lane's rule to be satisfied with ileocolostomy if it is difficult to remove the large bowel, and to remove it if it can be effected easily. This is a very practical and convenient rule. He never performs gastro-enterostomy for duodenal distention even if there be ulceration, as it is both unnecessary and harmful. If, however, the ulceration has resulted in a considerable reduction of the lumen of the bowel, either by the great extent of the ulceration or because of its cicatrization, he employs a gastro-enterostomy, having first freed the ileal effluent by an ileo-colostomy, or by the other means already referred to. If the stomach be much dilated, because of chronic spasm of the pylorus, to such an extent that, after short-circuiting, the spasm cannot be met by washing out the stomach for several days, he performs gastro-enterostomy. If the stomach be ulcerated and there be no suspicion of cancerous infections in addition to a short-circuit, with or without colectomy, Lane does gastro-enterostomy, in order to take the strain off the lesser curve by draining the stomach very effectually. The only risk, Lane says, presented by the operations of short-circuiting and colectomy is that of adhesion of the intestines to one another, or to the abdominal wall, in such a manner as to produce a varying degree of obstruction. This is a risk common to all abdominal operations, and can only be reduced to a minimum by avoiding any unnecessary exposure or damage of the intestine, and by suturing the cut surfaces of peritoneum accurately together.

3. See *The Lancet*, abstract 29.

4. **Treatment of Spastic Paraplegia.**—The immediate objects of surgical treatment, Little states, are as follows: Correction of deformity, and abolition or diminution of spasm, with the ultimate end in view of enabling the patient to place the limbs in such a position that he may use them properly, but before undertaking any treatment the surgeon must form an estimate of the mental capacity of the patient. If this seems to be normal or even approaching to normal, it is worth while to undertake thorough and long-continued treatment, in the belief that the patient's will power and intelligence will enable him to take advantage of every improvement. If, however, the patient is idiotic, there is little hope of his learning to use his muscles, and disappointment is nearly sure to follow treatment. In a case of doubtful intelligence it is desirable to give the patient the benefit of the doubt, and to undertake the treatment, always remembering on the one hand that parents generally overestimate the intelligence of these children, and on the other that improvement in the physical condition is nearly always accompanied by improvement in the mental condition, sometimes to a surprising extent. Almost all observers are agreed on this point, and also in the opinion that treatment must be patient, prolonged and persevering.

5. **Hereditary Transmission of Sarcoma.**—Manson gives account of the illness and deaths of a mother and two sons from sarcoma, which he thinks justifies the title of his article.

6. **New Method of Dealing with Scars.**—The following method is described by Tubby: With a fine and strong-backed tenotomy knife a large number of multiple incisions are made transversely to the bands of keloid material. The incisions are placed close together, not more than one-tenth of an inch apart; and great care is taken that they should penetrate not only into the subcutaneous fat, but also extend one-quarter or half inch into the neighboring healthy skin. No attempt is made to arrest the hemorrhage except by pressure, and when bleeding has ceased, a solution of thiosinamin is vigorously rubbed in; and, if the scar tissue is very thick, a few drops are injected into the most prominent bands. Tubby has no hesitation in injecting, in children, 15 min. at a time, and in adults 20 min.; in only one case was there any effect on the heart. In that instance some slight cardiac collapse occurred for a few minutes; the patient, however, was over 60 years of age, and, happily, no permanent ill results followed. After the operation, the part is put up on a splint, in as much extension as possible, without tearing the soft parts, and is allowed to heal. This is accompanied by no excessive reaction and very little pain. After ten or fourteen days the wound will be healed, and the mobility of the part is increased by 50 per cent. The operation is then repeated, and, Tubby says, it rarely may be required three or four times. He has carried out this method in over a dozen cases, and has been specially pleased with the results.

### Indian Medical Gazette, Calcutta

*September, XLVIII, No. 9, pp. 337-376*

14 Iodin as Aid to Aseptic Vaccination. E. E. Waters.
15 Relapsing Fever in Bulandshahr District, U. P., 1912-1913. R. Steen and R. S. Townsend.
16 Inquiry into Malaria and Mosquitoes in Kashmir Valley. J. R. Adie.
17 Investigations into Incidence of Malaria in Town of Arambagh, Nooghly District. S. L. Sarkar.
18 Four Indigenous Drugs. R. H. N. Ghosh.
19 Night-Soil Incineration in Cantonments. P. Hehir.

### Journal of State Medicine, London

*October, XXI, No. 10, pp. 577-640*

20 Coagulation of Blood. J. Bordet.
21 Open Spaces. B. Holmes.
22 Etiology of Cholera Asiatica. R. Emmerich.
23 Problem of Surgical Tuberculosis among (A) Uninsured and (B) Insured Persons. H. O. West.
24 Relation of Eugenic Education to Public Health. A. C. Gotto.

### Lancet, London

*November 1, II, No. 4705, pp. 1235-1298*

25 Influence of Harvey's Work in Development of Doctrine of Infection and Immunity. J. M. Bruce.
26 Nature and Degree of Specific Differences among Bacteria. F. W. Andrewes.
27 Two Years' Experience with Salvarsan. M. Morris and H. MacCormac.
28 Arteriovenous Aneurysm of Axillary Vessels of Thirty Years' Duration. W. Osler.
29 *Visceral Complications Met with in Hysterectomy for Fibroids. J. Bland-Sutton.
30 Case of Hypophysis Tumor and Sellar Decompression. W. Harris and C. Graham.

29. **Visceral Complications in Hysterectomy for Fibroids.**—Fibroids, says Bland-Sutton, are often present in women suffering from chronic cardiac disease, and it has been maintained by several writers that uterine fibroids cause degenerative change in the muscular tissue of the heart. Many patients with fibroids have valvular lesions, a consequence of rheumatic fever, and in many women who have been reduced to a condition of profound anemia by a submucous fibroid the heart yields a loud murmur on auscultation. Bland-Sutton has had careful observations made on the cardiac condition of women with fibroids, and he says there is nothing which can be described as peculiar to the influence of these tumors. On a dozen occasions he has removed the uterus containing large fibroids, although the heart has furnished murmurs, clearly due to valvular lesions, when an examination by a competent physician has shown that compensation has been satisfactory and that an operation would not be attended with unusual risks. On three occasions he has removed a uterus containing fibroids from women who at the time of the operation possessed goiters and has been surprised on seeing the patients six months after hysterectomy to notice marked dimunition in the size of the goitrous thyroids. The presence of sugar in the urine, is, as a rule, a contra-indication to hysterectomy for fibroids. All patients requiring hysterectomy who come under Bland-Sutton's care have their urine carefully examined for sugar. Gall-stones are common in women; so are fibroids; and it sometimes happens that women come under observation with the two conditions giving so much trouble that the surgeon is puzzled to know which should be dealt with first. On three occasions Bland-Sutton has removed a calculous gall-bladder in the course of hysterectomy for fibroids. In each instance the uterus was so large as to require for its removal an incision reaching nearly to the ensiform cartilage. In these circumstances the removal of the gall-bladder was a simple operation. In one instance the inflamed gall-bladder adhered to a large subserous fibroid. In two other instances of this combination he removed the gall-bladder six months after the hysterectomy. The only definite rule which he thinks can be laid down in the matter is this: If a woman deeply jaundiced in consequence of a stone impacted in the common duct also suffers from a uterine fibroid, which so troubles her as to make it desirable to remove the uterus, he should prefer to remove the stone from the common duct first because it is well known that cholemia predisposes to hemorrhage. Hysterectomy in a woman with persistent jaundice is an operation which would place her life in the gravest peril from post-operative bleeding.

### Medical Press and Circular, London

*September 24, XCVI, No. 3881, pp. 333-358*

31 Diagnosis of Chronic Ulcer of Stomach and Duodenum. J. Sherren.
32 Roentgen Rays in Diagnosis of Abnormalities in Intestinal Tract. M. R. J. Hayes.
33 Heredity and Skull Form. W. H. Broad.
34 Treatment of Tuberculous Joints by Internal and External Use of Iodin. T. Dutton.
35 Leprosy Bacillus and Allied Bacilli. E. R. Rost.

*October 1, No. 3882, pp. 359-384*

36 Meningeal Reactions in Course of Poliomyelitis. V. Hutinel.
37 *Nauheim Treatment in England. L. T. Thorne.
38 Hilus Tuberculosis (Root Phthisis). R. M. Leslie.
39 Necessity for State Endowed Hospitals and State Medical Service. J. C. M'Walter.
40 Relations of Anemia to Achylia and Gastritis Chronica. K. Faber.
41 Medical Treatment of Piles. C. Duba.

*October 8, No. 3883, pp. 385-410*

42 Practical Consideration of Vaccine Therapy. W. Wingrave.
43 Malingering. F. S. Palmer.
44 Acute Rheumatism. F. J. Poynton and A. Paine.
45 Treatment of Skin Affections by Solid Carbon Dioxid. J. L. Bunch.
46 Some Rhenish Surgery. W. Doolin.

37. **Nauheim Treatment in England.**—The post-influenzal heart, weakened and dilated by the toxins of the disease, and giving rise to symptoms of dyspnea, palpitation and cardiac pain, and ultimately causing a general invalidism and inability for any work or pleasure, Thorne says, is one which responds rapidly to this treatment. Cases of high arterial tension, in which the area of cardiac dulness is found to be enlarged, exhibiting symptoms of dyspnea, headache, palpitation, cyanosis and general ill-health, will respond well to a course of Nauheim baths, and the blood-pressure will drop from 20 to 40 mm. Hg during treatment, often falling from 170-80 mm. Hg to 130-40 mm. Hg, and the troublesome and dangerous symptoms will be relieved for a long period. Cases of valvular disease with cardiac dilatation, indicating a weakened and degenerate condition of the myocardium, respond well to the treatment, more especially if high arterial tension is present. In uncomplicated cases of valvular disease with cardiac hypertrophy treatment is not necessary, but it is seldom that a case of valvular disease of long standing with a raised blood-pressure does not exhibit some symptoms of cardiac dilatation and defective circulation, and if these are present they can be relieved by a course of baths more satisfactorily and for a longer period than by any other form of treatment. When premature cardiac contractions, arising in the ventricles or auricles, are present, causing cardiac irregularities and distress to the patient, it is often found that they gradually decrease in frequency during a course, and that at the end of the treatment a perfectly regular heart's action is established, this being due to the improved nutrititon of the conductive mechanism of the heart. Cases of obesity and fat-clogged hearts and raised blood-pressure are not only greatly improved in health by a course of Nauheim baths, but lose fat steadily both during the course and for some months after.

Cases of irritable heart of a "functional" nature, in which no organic lesion is discovered, are often greatly relieved by this treatment, but they are not so certain of improvement as cases in which definite dilatation is present. Cases of anemia with cardiac dilatation, which do not respond to treatment with iron, arsenic or general hygienics, will often show immediate improvement if a course of Nauheim baths is given in conjunction with other treatment. Thorne states that it is not advisable to give the Nauheim treatment in cases in which there is general evidence of a broken-down constitution, nor has he found it of much benefit to patients exhibiting auricular fibrillation, or in those in which very advanced degeneration of the vessel-walls is present.

### Practitioner, London

*November, XCI, No. 5, pp. 589-744*

47 *Widal's Agglutination Reaction as Aid in Prognosis in Enteric Fever. H. H. Scott.
48 Diagnosis and Treatment of Hemic Infection of Urinary Tract. F. Kidd.
49 Recent Work on Anesthesia. J. Blumfeld.
50 Law and Medicine, 1912-1913. W. A. Brend.
51 Recent Work on Diseases of Lungs. A. J. Jex-Blake.
52 Tuberculin in Diagnosis and Treatment of Pulmonary Tuberculosis. J. K. Patrick.
53 Tuberculin in Diagnosis and Treatment of Tuberculosis. A. D. S. Cooke.
54 Rational Treatment of Cancer. De Keating-Hart.
55 So-Called Movable Kidney Disease. G. Monod.
56 Infantilism. C. E. Zundel.
57 *Effect of Nauheim Baths on Cardiac Conductivity. L. T. Thorne.
58 Symptomatology of Cholelithiasis. C. M. Kennedy.
59 *Is Enlarged Prostate the Cause of Residual Urine? A. G. Miller.
60 Relation between Pancreas and Diabetes. T. S. Tirumurti.
61 Acute Pemphigus due to Infection by Diplococcus. G. W. M. Custance.
62 Effect of Mental State, of Minor and Major Attacks in Epileptic Insanity. S. J. A. H. Walshe.
63 Physicians in Decameron. J. B. Adams.

47. **Widal's Agglutination Reaction.**—The main point made by Scott is the value of the agglutination reaction as an aid

in prognosis. If the case is "clinically typhoid" but no agglutination is obtained by the tenth day, Scott says, the case is likely to be severe and prolonged. Not uncommonly a hemorrhage in these cases will, within a few hours (provided it is not fatal), be followed by a marked rise in the agglutinating power of the serum. Scott is inclined to think that in some of such cases benefit would result, if nature were to be forestalled by a small quantity of blood being withdrawn by venesection, and the agglutinating power of the serum thus raised.

57. **Cardiac Conductivity.**—Thorne cites cases to show that the action of Nauheim baths on cardiac conductivity and muscle contraction is very beneficial, for it not only accelerates a slow, and regulates an irregular conductivity, but markedly stimulates auricular contraction.

59. **Is Enlarged Prostate Cause of Residual Urine?**—The question asked in the title is answered by Miller in the negative because he has seen cases in which there was enlarged prostate without any residual urine, and others in which there was residual urine without any perceptible enlargement of the prostate. In patients who present themselves for treatment, especially at hospitals, the two conditions usually co-exist. Miller submits this might be because both conditions are common in old men. If each occurs sometimes separately, surely neither can be considered the invariable cause or result of the other. They cannot be mutually inter-dependent. In Miller's opinion residual urine is the result of an acquired habit of not emptying the bladder thoroughly. No doubt an enlarged prostate, by making micturition more difficult, increases this habit or may start it. But, that "habit" is the explanation is Miller's conviction, because residual urine can be got rid of by training the bladder to empty itself thoroughly even when enlargement of the prostate is present.

### Annales de Gynécologie et d'Obstétrique, Paris

*October, XL, No. 10, pp. 561-624*

64 Pathogenesis of Traumatic Lesions of the Orbit during Forceps Delivery. Lévy.
65 *Pedunculated Thrombus in the Vagina in Two Pregnant Women.* J. Potocki and C. Sauvage.
66 The Arterial Blood-Pressure Rises during Onset of Lactation. Audebert and Etchevers.

### Annales de Médecine et Chirurgie Infantiles, Paris

*October 15, XVII, No. 20, pp. 669-704*

67 *Obesity in Children. P. Le Gendre.

67. **Obesity in Children.**—Le Gendre's article has already been mentioned in The Journal, November 8, p. 1739. He emphasizes that obesity is a progressive syndrome from changes in the functioning of the nervous system regulating the deposits of fat; these disturbances are the result of the action of toxins from within or without. The obesity is first a symptom, then a syndrome, and then a disease, and it is important to arrest it in its early phases. Obesity may be regarded as physiologic in a breast-fed infant with good general health; the weight generally returns to the normal standard after the child begins to walk. There is also a physiologic obesity just before puberty which the children outgrow. Under all other conditions he regards a progressive increase in fat under ordinary circumstances as a sign that something is wrong and requires correction; *if not corrected, other functional disturbance will* develop not dependent on the obesity but on the nutritional anomaly of which the obesity is only one manifestation. An inherited predisposition is evident in the majority of cases; such children generally belong to families of large eaters through several generations, and the obesity in the children can be traced to this gouty, neuro-arthritic inheritance with sluggish elimination. He discusses the influence of the glands with an internal secretion, and says that the importance of correcting the causes entailing obesity in children is enhanced by the fact that the obesity prevents the child's taking part in the plays of its mates. Treatment should aim to correct the errors in hygiene and diet and the insufficiency of the thyroid, genital or other glands involved. The table in certain families, he remarks, seems to be planned to bring on obesity, or the children are given beer or wine which injures their digestion and nervous system. In certain families the parents demand too much of the children so that they reach school wearied and worried over their tasks and lessons, their walk to school interfering with digestion. Then they are liable to play too hard and exhaust themselves and forget to go to stool at regular hours. He thinks that walking may be carried to excess for children; their bones are not fitted for prolonged regular walking. It is valuable only in small doses, but *a few minutes of exercises* and games which have a tendency to increase the ventilation of the lungs are particularly useful. The great difficulty in the family is that the parents like to see the child eat and fear "it is not getting enough."

### Journal de Chirurgie, Paris

*October, XI, No. 4, pp. 409-532*

68 *Operative Treatment of Infectious Processes in the Palm of the Hand. R. Picqué.

68. **Infectious Processes in the Palm of the Hand.**—Picqué describes with fourteen *illustrations the best technics for* operating on infectious processes in muscle or tendon sheaths in the palm. Eight of the illustrations are devoted to the *normal anatomy* of the region at different depths. For a phlegmon in the palm, he makes two incisions, radiating from the center of the palm near the root of the thumb, but for suppuration in the tendon sheaths he makes four, one along the ball of the thumb, the second an extension of this along the front of the thumb. The third incision runs at a right angle from the first and reaches nearly to the root of the little finger. The fourth is the extension on the palmar aspect of the little finger of the third incision. By this quadruple incision, total suppurating palmar synovitis can be reached and treated without injury of the vessels. The two incisions run parallel to the vessels, but they are on the flank of the flexors and thus the vessels can be readily detected and drawn aside at need. The four drains introduced should converge toward the pus pocket but they should never be pushed forcibly in. He has seen the temperature drop from 104 to normal by the next morning after this quadruple incision which ensures transverse drainage on both sides. In case the trouble persists, from involvement of the wrist region, he divides the annular ligament after suturing the four incisions of the day before. No functional disturbances follow section of the annular ligament, while it permits ideal drainage of the region. If a phlegmon develops in the forearm, the two lateral incisions below should be carried up as needed. If the wrist proper suppurates, the dorsal incision according to the Ollier or Kocher technic, supplementary to the incisions in the palm, will permit X drainage. In one case *he successfully performed all the above operations in* turn in the course of forty-eight hours, an insane man having cut himself by breaking a window. Lecène cuts the annular ligament as one of the first steps, but Picqué advises the above sequence, restricting the intervention to what is actually needed at the moment.

### Journal d'Urologie, Paris

*October, IV, No. 4, pp. 533-732*

69 *After Suprapubic Prostatectomy. G. Marion.
70 Impalement Injury of the Bladder. M. Gerard.
71 *Nephrostomy. (Moyen de *dérivation permanente* ou temporaire des urines totales.) J. Pakowski. Commenced No. 3.
72 *Failure of Tuberculin Treatment in Renal Tuberculosis. C. Gauthier.
73 Urethroceles in Men. J. Paris and A. Fournier.
74 Irrigation of the Urethra without a Catheter. (Technique des lavages sans sonde de l'urètre.) J. Janet.

69. **Suprapubic Prostatectomy.**—Marion declares that the care after the operation is responsible for the ultimate outcome far more than the operation itself. Everything should be done to hasten the healing of the wounds and restore normal conditions in the bladder while keeping the general condition good, constantly *on* the watch to avert complications. He drains by means of a broad right-angled tube with small tube attached to permit irrigation of the bladder. The recess left by removal of the prostate is packed loosely with gauze to which two threads are firmly fastened, the ends of the threads brought out through the broad glass-drain. The drain tube must reach deep down into the bladder to ensure

perfect draining; as the wound heals the tube is replaced with one of smaller diameter. The part reaching into the bladder is the same length in all. Some of his patients had the bladder heal in twelve days, others not until twenty-five or thirty days. The retention catheter must be kept in place nights for two nights after the bladder has healed, to avert distention during sleep. The less the parts are handled, the less danger of complications. He insists that the postoperative measures should be applied by the physician himself, unless he has a dependable nurse with long experience in exactly these cases. By taking charge of these minor details, the physician is kept in close touch with the patient and can detect and remedy unfavorable conditions at their first manifestations, while he is constantly learning new points in treatment which can be applied at the time and later.

71. **Advantages of Nephrostomy.**—Pakowski concludes his long article on this subject by emphasizing the importance of proceeding gradually, never attempting too much at one sitting, in operations on the urinary apparatus. A preceding nephrostomy on both sides, diverting the course of the urine, leaves the field below free for any operation that may be required. The mortality to date has been only 4.5 per cent., and in these cases the fatality was due to the affection for which the nephrostomy had to be done rather than to the nephrostomy itself. Implantation of the ureters in the skin, urethra, vagina or bowel has a high mortality at the time and from pyelonephritis later. Nephrostomy permits direct treatment of lesions in the kidney; it also permits restoration of the natural course of the urine later, while it drains the kidneys most effectually, and this is the only means of warding off ascending infection. Ureterostomy is its only rival, but this does not drain the kidney so well.

He reviews 119 cases of total cystectomy; sixty-seven patients did not survive the operation, the mortality thus being 56.3 per cent. The gravity of the prognosis in these cases is due to the unwise method of caring for the ureters. Four died at once of the five patients whose ureters were implanted in the urethra; nine out of sixteen soon died when the ureters were implanted in the vagina. The mortality was 67.2 per cent. in the fifty-five cases in which the ureters were implanted in the bowel. All these fatalities are due to shock, anuria, peritonitis or ascending infection—all of which is the result of the laborious technic of the implantation procedure or of defective sutures. The fatal factor in this high mortality is generally pyelonephritis; it may have existed prior to the operation, and this is an additional argument in favor of preliminary nephrostomy. This is the only means to estimate conditions in the kidneys and improve them before proceeding to the cystectomy or other operation below. The benefits of this are instructively shown in two cases related in detail: In the first preliminary bilateral nephrostomy was done ten days before the bladder was entirely removed for cancer. The general condition is very good to date, nearly a year since the operation. The nephrostomy was also intended to be permanent in the second case in which the bladder and prostate were removed for epithelioma; the man of 53 was a worker on anilin dyes. The first symptoms of trouble had been severe recurring hematuria. There was no shock after the cystectomy, but rebellious hiccough for a few days followed both the nephrostomy and the cystectomy. Pakowski regards double nephrostomy as indicated with all malignant, painful and rebellious affections of the bladder, as also with congenital malformations, and with affections of the pelvic organs invading the bladder or compressing the ureters; also in case of a persisting tendency to production of calculi in the kidneys. Nephrostomy may be the only means to correct nephrolithiasis. Nephrostomy may also be indicated as a preliminary to treatment or operation for traumatic lesions of the lower urinary apparatus, especially vesicovaginal fistula. The nephrostomy may be only temporary in these cases. Nearly twelve pages of bibliography are appended.

72. **Tuberculin Treatment of Renal Tuberculosis.**—Gauthier reports the end-results in a case of renal tuberculosis which he published last year as an instance of successful tuberculin treatment. Nephrectomy became necessary a few months later. This has destroyed his confidence in tuberculin treatment, as this is his fourth failure with it. He found it valuable in two other cases, in one of which both kidneys were involved, rendering nephrectomy impossible. His conclusions are in harmony with Albarran's dictum, *Diagnostic précoce, néphrectomie précoce.*

### Lyon Chirurgical, Lyons

*September, X, No. 3, pp. 221-328*

75 *Retrogasserian Neurotomy for Neuralgia. (La résection physiologique du ganglion de Gasser dans le traitement des névralgies faciales rebelles.) F. de Beule.
76 *Parasitic Invasion as Cause of Malignant Degeneration of Benign Tumors of the Breast. M. Jaboulay.
77 Murphy's Arthroplastic Method for Ankylosis of the Hip Joint. Guillot and Dehelly.
78 *Stretching the Solar Plexus in Treatment of Gastric Crises in Tabes. R. Leriche and P. Dufourt.

*October, No. 4, pp. 329-424*

79 Inflammatory Ovarian Tuberculosis. (Les productions kystiques de l'ovaire liées à la tuberculose.) A. Pollosson and H. Violet.
80 Anatomic and Physiologic Aspects of Decapsulation of the Kidney. J. Murard.
81 Experimental [illegible] Ovaries. A. Lacassagne.
82 *Stretching or [illegible] Nerves in Painful Arterial Affectic[illegible] R. Leriche.

75. **Operative Treatment of Trigeminal Neuralgia.**—De Beule insists that resection of the root of the trigeminal nerve between the gasserian ganglion and the protuberance answers all the purposes of gasserectomy while it is a much simpler and safer operation. It does not destroy the nerve route but breaks its continuity by taking out a segment. He says that the nerve here is composed exclusively of white fibers, and white fibers once degenerated never regenerate anew, and consequently no transmission of pain is possible later, while the ganglion and the rest of the nerve are left intact. De Beule credits the method to Spiller of this country, but says that Van Gehuchten's research first rendered it practicable. All his eight patients have been permanently cured by the operation, and no by-effects have been observed. This technic has been applied in seventy cases to date, to his knowledge; two patients died. In one of De Beule's cases the patient died several months later and necropsy revealed a large cancer originating in the sphenoidal sinus. The pressure from the growth had evidently been the cause of the "neuralgia," but the patient was freed from pain thereafter by the neurotomy. This case is cited as strikingly confirming the theoretical premises on which the retrogasserian neurotomy is based. Seven plates accompany the article illustrating the technic and the ample access and oversight afforded by turning down a flap directly over the ear. The guide is the anterior surface and the upper margin of the petrous portion of the temporal bone, and this must not be forsaken on any pretext. The outer edge of the nerve is always found just inside the retrogasserian tubercle.

76. **Malignant Degeneration of Benign Tumors of the Breast.**—Jaboulay ascribes to invasion by a protozoon the transformation of benign mammary tumors. The sarcosporidia involved are not found in the same phases of development as in animals, but the cancerous degeneration follows on their trail. He gives eight illustrations of sporoblasts and spores found in a testicle sarcoma; *sarcosporidia in a thyroid cancer;* spores in a mammary tumor, showing patches of malignant degeneration, cystic disease, etc.

78-82. **Stretching the Perivascular Nerves for Painful Arterial and Other Disease.**—Leriche and Dufourt report four cases of tabetic gastric crises in which they applied stretching of the solar plexus. They state that the procedure caused no inconveniences of any kind and the immediate results were excellent, but they did not prove durable. They think that the principle is good, but that the technic to date is still defective. Leriche ascribes the failure in tabes to the fact that the lesion of the nerves is too diffuse and wide-spread to be affected by the operation. On the other hand, it offers every prospect of success in certain cases of intestinal pain of arterial origin which may be defined as Raynaud's disease of the intestine, as also in painful subacute aortitis. The spread of the inflammation to the nerves around entails intense pain, liable to elicit fatal reflex action, vasomotor spasm of the coronaries, cerebral arteries or bronchial vessels. Other affections possibly amenable to this treatment are true Raynaud's disease and congenital trophoedema. In a case of the latter, Leriche states that the leg became reduced 2 cm. in circumference after denudation of the femoral artery in the triangle of Scarpa. Jaboulay has found this useful in treatment of rebellious mal perforant; Viannay has been equally successful with it, and Leriche in two cases. In one of his cases the affection returned a few months later, but the healing proceeded rapidly afterward. The aim is to stretch the perivascular plexuses, dilacerating the peri-arterial plexus. He calls the procedure "denudation of the artery and dilaceration of the perivascular nerve plexuses." The disturbances he seeks to remedy by this may not be the only elements in the clinical picture, but excluding these may transform the whole syndrome. The nerve ramifications may be involved in inflammatory sclerosis, and there is every reason to liberate them.

### Presse Médicale, Paris

*October 18, XXI, No. 85, pp. 845-856*

83 Diathermia. A. Zimmern.

*October 22, No. 86, pp. 857-864*

84 Localization of Arsenic in the Viscera after Injections of Salvarsan. E. Jeanselme and others.

### Revue Médicale de la Suisse Romande, Geneva

*October, XXXIII, No. 10, pp. 721-792*

85 *Classification of Nervous and Mental Diseases. (Le concept de psychasténie.) L. Schnyder.
86 The Internal Ear. (Exploration clinique du labyrinthe. Dernières acquisitions et vue d'ensemble.) H. Joliat. Continued.
87 Lymphogranuloma in the Mediastinum. Wanner.
88 *Tetanus of the Head. (Le tétanos céphalique). J. Mégevand.

85. **Classification of Mental Diseases.**—Schnyder thinks that in all the fluctuating conceptions of nervous and mental diseases the conception of psychasthenia, as Dubois formulates it, supplies a solid foundation for classification and treatment. This conception defines psychasthenia as a weakness in the primary judgment of things and events. Psychonervous disturbances can thus be traced to the habitual mentality. Effectual treatment, therefore, consists in rendering the judgment saner, bringing the individual to a juster appreciation of things and events.

88. **Tetanus of the Head.**—There was no history of trauma, and the young man had been previously healthy when the tetanus developed with facial paralysis and trismus. The reflexes were exaggerated but three were no other symptoms except that the larger muscles were slightly tender and showed a trifle of contraction. He was given chloral in large doses, 12 gm. a day for thirteen days. Then the chloral was suspended for two days, but aggravation of the symptoms and pain in the legs caused its resumption. Within fifty-one days he was given 456 gm. of chloral with final recovery. The disease evidently increases the tolerance for the drug. The mortality of tetanus of the head is only 36 per cent., according to recent statistics.

### Semaine Médicale, Paris

*October 22, XXXIII, No. 43, pp. 505-516*

89 *Automatic Reflex Movements. (Réflexes d'automatisme médullaire et réflexes dits "de défense"; le phénomène des racourcisseurs.) P. Marie and C. Foix.

89. **Automatic Reflex Movements.**—Marie and Foix have been studying the reflex movements which occur after the brain has been cut off from communication with the limbs, as in decapitated frogs. They conclude from their research that these reflex movements are not for the purpose of defense but are mainly the automatic movements of locomotion. The limbs are drawn up as in walking, the spinal cord functioning automatically when the brain is cut off. The reflex flexing of the limb is thus a sign of injury of the pyramidal tract. This assumption was confirmed at necropsy in three typical clinical cases. The reflex movements are generally moderate when the pyramidal tract is not much affected, but they become extremely pronounced when all the conducting routes are interrupted more or less completely, as by transverse myelitis or with paraplegia from compression. The tendon reflexes are exaggerated in the former, and the reflex automatic gait movements in the latter. These reflexes can even locate the site of the lesion in some cases. Study of them shows the connection between isolated facts which have hitherto seemed incomprehensible separate phenomena. These automatic, falsely styled "defensive" reactions fit into the great group of sensory-motor reflexes; they show the close connection between human pathology and experimental physiology and throw new light on the complex problems of reflex action and contractures.

### Berliner klinische Wochenschrift

*October 20, L, No. 42, pp. 1929-1976*

90 *Scarlatinal Kidney-Heart Disease. (Zur Kenntnis der nephritischen Herzanomalien bei Scharlach und ihre Behandlung.) A. Baginsky.
91 Cultivation of Parasite of Rabies. H. Noguchi (New York).
92 Varying Resisting Power of Different Kinds of Leukocytes. (Resistenz der farblosen Blutzellen.) A. Fraenkel.
93 Rectal Etherization. (Neue Methoden der Allgemeinnarkose.) J. H. Cunningham (Boston).
94 Pathology of Shock. Y. Henderson (New Haven).
95 Vaccine Therapy of Cancer. A. Pinkuss and W. Kloninger.
96 *Immunization of the Blood against Septic Disease. P. Krohl.
97 Deformity of the Skeleton of the Trunk. (Die angeborenen Entwicklungsfehler des Rumpfskeletts.) M. Böhm.
98 The Surgeon and the Law. (Die Stellungnahme der Strafrechtskommission des Reichsjustizamtes zum ärztlichen Operationsrecht.) S. Alexander.
99 The Rizzoli Orthopedic Institute at Bologna, Italy. G. Joachimsthal.
100 *Tuberculosis in Prussia since 1876. R. Behla.

90. **Scarlatinal Heart and Kidney Complications.**—Baginsky reports some cases and expatiates on the benefit from sweating procedures in the moderately severe cases. They not only arrest by mechanical means the congestion and tendency to suffocation from the hydrops, but they relieve the heart and respiration by the diuresis induced. A typical case is described in which the temperature was 105 at first but dropped at once after venesection, and the sweating procedure completed the change for the better. When the temperature keeps high, these hot sweating procedures are contraindicated as fraught with too much danger, and cold packs should be given the preference, leaving the child for an hour or two to sweat in the cold pack. In a typical case reported, a month after scarlet fever, the symptoms of uremia, dilatation of the heart, hydrops, high fever and severe dyspnea, subsided under the cold pack in which the child, a little over 3 years old, was left to sweat for a time. It seemed to have a direct life-saving action. He does not advise but one such pack a day, and he warns that as children react more vigorously to therapeutic intervention than adults, the pediatrist must be even more cool and cautious than at the bedside of adults.

96. **Mercury for Immunization of the Blood Against Septic Disease.**—Krohl noticed that patients taking a course of mercurial treatment seemed to be peculiarly resistant to ordinary infectious diseases, especially to epidemics of cholera, in his practice at Kiev. This fact and others suggested that mercury might have an action on the blood rendering it immune to septic processes, and his experiments with seventy-eight rabbits apparently confirm this assumption. He found that rabbits injected with mercuric benzoate (hydrargyrum benzoicum), bore without harm the injection of serum from the blood of a woman who had died of puerperal fever, or injection of pure cultures of streptococci. The doses of the mercury were very small; a series of injections of 0.0015 gm. to 1 kg. of the body-weight rendered the animal non-susceptible to infection with streptococci. A shorter series with a little larger dose also answers the same purpose. The drug showed such efficacy in the animals that he applied the same treatment to a number of patients threatened with septic processes, and reports a few typical cases to show the efficacy of intramuscular injections of this drug in prophylaxis of sepsis. Once developed, the septic affection is not modified by the small doses which he recommends. Among the illustrative cases cited is that of a woman of 29 who had chills and temperature of 39.1 C., pulse 128, the skin dry and the patient very restless and extremely thirsty, the third day

after delivery. She was given three injections of 0.01 gm. mercuric benzoate in the course of three days, under which the temperature and pulse subsided to normal. In another case with about the same symptoms after an artificial abortion, the mercury was not commenced until after the fourth day, and the patient died. Krohl regards these experiences as showing the importance of sterilizing the blood in this way while it is still possible to effect this.

100. **Tuberculosis in Prussia According to Age.**—Behla gives diagrams showing the mortality from tuberculosis according to ages since 1876. The total mortality has dropped from 30.95 per 10,000 living, in 1876, to 14.58 in 1912. Between the ages of 15 and 30 the decline has been from 26.91 to 17.48; between 30 and 60, from 48.62 to 19.49, and over 60, from 77.62 to 19.81. For children under 15, the decline has not been so great: Under 1 year of age the mortality was 22.24 in 1876 and 18.4 in 1912; between 1 and 5 years of age the figures are respectively 11.72 and 8.22; between 5 and 10, 4.17 and 4.32 and betecwn 10 and 15, 5.71 and 5.21. This lack of decline in the mortality from tuberculosis among children is remarkable when we consider that the mortality from other diseases among children has dropped so materially for the same ages. Diphtheria, for instance, from 45.09 to 6.98, and typhoid from 5.29 to 0.28. The figures for 1908 show that 1,423 of 2,852 infants succumbing to tuberculosis died in the first six months and 1,429 in the rest of the year. If congenital tuberculosis were very prevalent the proportion succumbing in the first six months would have been larger.

### Correspondenz-Blatt für Schweizer Aerzte, Basel

*October 11, XLIII, No. 41, pp. 1281-1312*

101 Roentgenoscopy of Pulmonary Tuberculosis. H. Staub.

*October 18, No. 42, pp. 1313-1344*

102 Therapeutic Pneumothorax in Pulmonary Tuberculosis; Twenty Cases O. Amrein and F. Lichtenhahn.

### Deutsche medizinische Wochenschrift, Berlin

*October 23, XXXIX, No. 43, pp. 2073-2128*

103 *Combined Treatment of Cancer. (Die Bestrahlungs- und chirurgische Behandlung maligner Neubildungen.) L. Freund.
104 *Benzol in Leukemia. E. Mühlmann.
105 Experimental Research on Abderhalden's Serodiagnosis of Pregnancy. Naumann.
106 Recovery after Nephrectomy for Misplaced Tuberculous Cystic Kidney. (Grosse Solitärzyste in einer ins Becken gewanderten tuberkulösen, arteriosklerotischen Amyloidniere.) W. Falgowski.
107 Sleeping-Sickness in Uganda. C. Schilling.

103. **Radiotherapy of Cancer.**—Freund emphasizes that the same rules apply to radiotherapy as to operative treatment of cancer, namely, that intervention should be as early as possible, before the lymph and blood-vessels have become involved and before long offshoots have been sent forth. When the technic becomes so perfected that all the cancerous tissue can be effectually destroyed by the rays applied from all sides, then radiotherapy can be regarded as a certain cure for cancer. Until these conditions are realized the rays have only a narrow field of action, and radiotherapy thus represents merely a painless and elegant method of palliative treatment: The cancer germs left, not destroyed by it, bring on recurrence with possibly even a more rapid course than the first time. It is impossible to say beforehand whether the rays will reach and destroy all the cancer cells, although this is always theoretically possible. He adds that even if the cancer is entirely cured by the radiotherapy, this does not guarantee that another cancer may not develop at some previously sound point, in the sound breast, for instance. Preceding removal of the pathologic tissue will naturally enhance the action of radiotherapy later. He thinks that the dosage in milligram-hours is not very scientific. The dosage should be calculated for the quantity of the radium element present, the length of the exposures, the mode of filtering, the superficial and deep extent of the cancer, and its histologic and physical character. His conclusions are based on 176 cancers treated by the Roentgen rays or radium in the last twelve years in Finger's service at Vienna. The best results were attained in case of epithelioma, ulcus rodens and Paget's disease. Thirty-two of the eighty patients in these categories have been cured for from one to ten years, that is, 35 per cent.

104. **Benzol in Leukemia.**—Mühlmann reports a case of lymphatic leukemia in a man of 37 with necropsy findings. He was given benzol during nearly six months to a total of 175 gm. There was marked improvement at first; after three or four weeks the condition was much improved and the condition continued to improve on suspension of the benzol for two weeks; then the leukocytes began to increase in numbers again but a further course of 40 gm. benzol reduced the leukocytes to 20,000. Then they ran up again and the patient succumbed. Necropsy showed extensive necrosis in the liver. Neumann has reported similar findings of necrosis in the liver of a man with myeloid leukemia treated with benzol. Pappenheim also found necrosis in the liver of rabbits given benzol, although in the rabbit liver the necrosis was in the outer portions; in the two clinical cases it was in the central part. These experiences emphasize the wisdom of keeping close supervision over the functioning of the liver during a course of benzol treatment.

### Deutsche Zeitschrift für Chirurgie, Leipsic

*October, CXXV, Nos. 1-2, pp. 1-210*

108 Sacral Anesthesia in Surgery. M. Suchy.
100 Experimental and Clinical Research on Chronic Granulating Inflammation of the Bone Marrow; Staphylomycosis. F. Rost.
110 *Polyserositis. V. Esau.
111 Dislocation of the Knee-Joint with Inversion of the Patella. M. Frei.
112 Prophylaxis of Recurrence of Cancer. A. Theilhaber.

110. **Polyserositis.**—Esau operated for a supposed abdominal tumor in the case reported but no tumor was found, merely an enormously enlarged liver, with ascites. The liver tissue seemed normal and there was no pathologic history, no syphilis. However, a tentative course of antisyphilis treatment was instituted but no effect from it was apparent. The man of 28 soon required tapping and fifteen liters of fluid were siphoned out. During the three following years the patient had to be tapped at first every four months but later more frequently. Omentopexy was done (Talma operation) the fourth year but with only transient benefit. The necropsy findings after eight years showed typical polyserositis, iced liver and spleen, and chronic obliterating pericarditis. Tapping had been repeated eighty times and a total of 800 liters of fluid had been withdrawn. The man had been previously healthy except for typhoid at 11, and he had three healthy children. The second patient was a previously entirely healthy man of 49 and the disease ran an acute course in two months. The characteristic findings were restricted to the small intestine, causing multiple stenosis and agonizing colics. A laparotomy showed the small intestine enormously distended, with the characteristic iced appearance, the result of chronic peritonitis without effusion. The man died in collapse the second day. No signs of tuberculosis were found in either case. There seems to be no help for polyserositis except from operative measures and these usually come too late. The hope lies in some modification of the Talma operation—omentopexy—done before irreparable lesions have become installed. The trouble generally begins with a stormy onset and then passes into a chronic phase with recurring ascites, gradual weakening of the heart, edema of the legs and cyanosis. The patients are generally under 30 but middle age is not exempt.

### Jahrbuch für Kinderheilkunde, Berlin

*October, LXXVIII, No. 4, pp. 373-496*

113 Mechanism of Cerebral Activity in Children. (Grundmechanismen der Arbeit der Grosshirnrinde bei Kindern.) N. Krasnogorski.
114 Factors which Stunt the Growth of Infants: Twenty-Six Cases. (Störungen des Langenwachstums der Säuglinge.) K. Stolte.
115 *Transillumination in the Diagnosis of Chronic Internal Hydrocephalus. (Die Strassburgersche Transparenzuntersuchung bei chronischem *Hydrocephalus* internus.) J. v. Bokay.
116 *Diphtheria Antitoxin Content of Human Blood Serum. *H. Kleinschmidt.*

115. **Transillumination in the Diagnosis of Chronic Internal Hydrocephalus.**—Strassburger in 1909 demonstrated hydrocephalus in a 3-months-old child with head of practically nor-

mal size. He had examined it under strong electric light in a dark room and had found the skull transparent. This transparency is present only when the thickness of the brain substance is not more than 1 cm. The bones of the child's skull are transparent under strong light, up to about the age of 3. Von Bokay gives histories of fifteen children with internal hydrocephalus whom he examined in this way. The degree of transparency depends on the thickness of the brain substance and the amount of fluid. The collection of fluid is frequently asymmetrical and the method gives information of practical value as to where puncture and drainage can be done most effectively and with least injury to the brain substance. It is particularly valuable in the diagnosis when the size of the head is almost normal and gives little or no indication of the condition. The findings in his cases are shown in eight colored plates.

116. **Diphtheria Antitoxin in Human Blood.**—Kleinschmidt concludes that the diphtheria antitoxin so frequently found in the serum of individuals who have not had diphtheria is due to latent infection with diphtheria bacilli. Protective substances must have been formed in sufficient quantity to avert an attack of the disease. He found antitoxin in the serum of two of eighteen infants free from any history of diphtheria, and in ten of sixteen others known to have had diphtheria up to a few months before and still harboring the bacilli. Technical details of his experiments are given.

### Medizinische Klinik, Berlin

*October 19, IX, No. 42, pp. 1709-1750*

117 *Treatment of Embolism, Thrombosis and Gangrene. F. Lotsch.
118 *Treatment of Inflammation and Processes with Effusion. (Einwirkung parenteral eingeführter Kolloide und wiederholter Aderlässe auf die Durchlässigkeit der Gefässe.) F. Luithlen.
119 Improved Technic for Differential Atmospheric Pressure. (Die weitere Ausgestaltung der Unterdruckatmung für die Behandlung der Kreislauf- und Atmungsstörungen.) O. Bruns.
120 *Venous Thrombosis with Heart Disease. F. Glaser.
121 Acute Lymphogranulomatosis. H. Peiser.
122 Importance of Routine Cystoscopy. (Erfahrungen auf dem Gebiete moderner Urologie.) O. Kneise.
123 Kaolin-Glycerin Paste in Dermatology. P. G. Unna. Commenced in No. 41.
124 Döhle's Leukocyte Inclusion Bodies Not Peculiar to Scarlet Fever. M. Massini.

117. **Treatment of Thrombosis and Gangrene.**—Lotsch recapitulates the general view that the treatment of thrombosis lies essentially in prophylaxis. Passive exercise and light massage should be systematically applied to persons kept long in bed for any cause. With gangrene, the aim should be to ward off putrefaction. The surface should be kept dry with powder or superheated air, but he warns that the resistance of the tissues to heat is materially reduced, and great caution is required. Reports are accumulating of favorable results from local alternating hot and cold baths, changing from the hot to the cold water and back again repeatedly for fifteen minutes at a time. The alternation of anemia and hyperemia thus induced causes a gymnastic exercising of the vessels, and if kept up for a long time, up to several months, may realize great improvement. He says that fifteen cases are on record in which an attempt was made to extract the embolus in the pulmonary artery. Krüger's patient survived the operation for five days but then succumbed to pleurisy. Two other patients survived for fifteen and thirty-seven hours. In case of fat embolism, such as is liable to follow extensive fractures or crushing of the liver, it might be possible to expose the thoracic duct and divert its contents outward, as most of the fat is conveyed to the blood through the thoracic duct. In case of air embolism, especially when a vein is opened near the thorax, direct compression at once is the safest measure. The sound of the air entering the vein is never forgotten when once heard. A small amount of air is borne without harm, but when the blood in the right heart becomes foamy from admixture of air, the heart works in vain. As a last resort, the right ventricle might be punctured, to the right of the sternum, to release the air.

118. **Venesection and Gelatin in Treatment of Inflammation and Processes with Effusion.**—Luithlen has previously called attention to the modification in the test reaction of the skin after serum or colloidal substances have been injected. Recent research on serodiagnosis and serotherapy has confirmed his findings and also his assumption that the result has nothing to do with any property of the serum as an antigen but rather to the fact that the serum represents a colloidal substance and that it is to this colloidal property that it owes its efficiency in pregnancy dermatitis, etc. He has worked out a method of research to determine the permeability of the vessel walls under various conditions. About 100 c.c. of Ringer's fluid is injected into the abdominal cavity; half an hour later he injects into a vein in the ear 2 c.c. of a 10 per cent. solution of sodium ferrocyanid, and after intervals of one, two, three, four, six, eight and ten minutes, he withdraws a small amount of fluid from the abdominal cavity and examines it for the presence of the chemical. This series of tests is followed at once with a repetition of the procedure using 5 c.c. of a 2 per cent. solution of sodium iodid. The tests were made on rabbits, some of which had been previously treated with gelatin, some with colloidal silicic acid and some with serum, others with preceding venesection. The results show that there was marked delay in the passage of the intravenously injected chemical after the above preliminary procedures. On the other hand, the passage of the chemical into the abdominal cavity was notably accelerated when instead of the above, the animals had been treated beforehand with electrolytic substances or hydrochloric acid.

In short, the research reported demonstrates that parenteral administration of colloidal substances, albuminous or not, and repeated venesection materially reduce the permeability of the vessels in rabbits for chemicals introduced into the veins. These findings throw light on the benefit from Gilbert's autoserotherapy in pleurisy and peritonitis with effusion, and also on the benefit from repeated venesection in certain cases. They suggest that venesection deserves a prominent place in the treatment of various processes of an inflammatory nature with effusion, pneumonia, pleurisy, etc., as a reduction of the permeability of the vessels materially aids in recovery.

120. **Venous Thrombosis in Heart Disease.**—Glaser's patient was a young woman with mitral, aortic and tricuspid insufficiency who developed signs of obstruction of the superior vena cava. The right sternocleidomastoid muscle swelled first, then the parotid gland region on both sides, and the entire right side swelled enormously. Twenty-five cases of the kind are on record with necropsy in four; twenty-three of the patients were women, nearly all under 30. Chlorosis is probably a contributing factor.

### Monatsschrift für Kinderheilkunde, Berlin

*XII, No. 6, pp. 269-346*

125 *Magnesium Sulphate in Treatment of Spasmophilia. N. Berend.
126 Variations in Weight on Withdrawal of Carbohydrates. R. J. Carneiro.
127 Case of Congenital Stenosis of the Intestine. K. Stolte.

125. **Magnesium Sulphate in Spasmophilia.**—Berend used magnesium sulphate subcutaneously in treatment in forty cases, twenty-seven of spasmophilia and fifteen of eclamptic children without spasmophilia. Detailed case histories and clinical charts are given. His initial dose was 0.2 gm. in the form of 15 to 20 c.c. of an 8 per cent. solution. He tried using 15 and 25 per cent. solutions, but with no better effect. Twice this dose could be given daily to infants without any toxic effects. The quickest and most intense effect was on the electric excitability of the muscles and the spasms of the hands and feet. It acts somewhat more slowly on the general spasms and Trousseau's sign, and least of all on spasm of the glottis. Results were generally obtained in twenty-four hours, and it was seldom necessary to continue the treatment longer than four or six days. Phosphorus and cod liver oil were given in conjunction with it after the second day. The two treatments supplement each other. There are two marked advantages with this over other forms of treatment: recurrence seems to be much rarer and the course of the spasmophilia is decidedly shortened. Moreover, with this treatment mother's milk is less of an essential. There is no danger of inanition because food does not need to be withdrawn as in other forms of treat-

ment. The only point to be insisted on in diet is that it must be poor in salts. The *treatment is* also of value in convulsions not due to spasmophilia if there is no cerebral irritation or disturbance of kidney function.

### Münchener medizinische Wochenschrift

*October 21, LX, No. 42, pp. 2321-2384*

128 The Abderhalden Seroreaction in Epileptics. O. Binswanger.
129 *Electric Treatment of Stretched Abdominal Muscles in Parturients. (Behandlung der Bauchdecken und des muskulären Beckenbodens bei Wöchnerinnen mittels des Bergoniéschen Verfahrens.) G. Brommer.
130 **Silver Rod in Treatment of Fracture of Forearm.* (Zur Behandlung von Vorderarmfrakturen mit Bolzung.) G. Schöne.
131 The Leading Ideas in Modern Physiology. A. v. Tschermak.
132 *Pathology of the Liver. W. Gundermann.
133 Salvarsan and Neosalvarsan in Concentrated Solutions. (Die Injektion konzentrierter Altsalvarsanlösungen mit der Spritze.) G. L. Dreyfus. (Intravenöse Injektionen von konzentriertem Neosalvarsan.) T. Katz and E. Saalfeld.
134 *Heart-Block Under Salvarsan. (Ueberleitungsstörung im Verlauf der Salvarsanbehandlung bei später Sekundärlues.) H. Fuchs.
135 *Acute Primary Diphtheritic Pneumonia. O. David.
136 Lead Meningitis. E. Plate.
137 Azotometer for Quantitative Determination of Urea, Uric Acid and Purin Bases in the Urine. A. Jolles.
138 Lay Praise of One Physician at Expense of Another. (Die falsche Behandlung oder der gelobte Arzt.) M. Nassauer.
139 The Rich Merchant and His Physician. (Die hohe Schule für Aerzte und Kranke.) M. Nassauer.
140 Disease of the Pancreas. A. Stauder. Commenced in No. 41.

**129. Electric Exercise of the Abdominal Walls after Delivery.**—Brommer applies Bergoniés method to exercise the muscles, without the cooperation of the patient, to restore tone to the abdominal wall in the puerperium. The method induces rhythmical contraction of the muscles without pain. The woman sits in a reclining chair which has large electrodes in the back and seat. The other electrode is laid on the abdomen and pressed firmly against the skin by bags of sand. The procedure was applied the fifth day after delivery for fifteen minutes, increasing on later days to forty-five minutes, with the weight of the sand bags up to nearly 70 pounds. No inconveniences or pain were ever experienced, while it was his impression that the muscles of the abdominal wall and floor of the pelvis regained tone with unusual rapidity and completeness. Encouraged by these results, he applied the method to patients after laparotomies. His experience with it in cases of obesity has also been encouraging, but not much success in this line can be realized with a confirmed and continuous large eater. The method is also useful to prevent atrophy after fracture of a limb. He reiterates in conclusion that this electric exercising of the muscles in the maternity and postoperative cases had a surprisingly good effect on the *functioning* of the intestines. The bowels moved regularly one or two hours after the sitting in two-thirds of the thirty parturients, and this effect was also apparent in the laparotomy cases. The article gives an illustration of a patient taking the treatment.

**130. Treatment of Fracture of the Forearm with Supporting Rod.**—*Schöne* uses a rod of pure silver, from 2.8 to 4 mm. in diameter, slightly rounded at the ends. He trephines the bone *for* the introduction of the rod and works it in through the bone marrow to reinforce the arm; the silver has also antiseptic power. Two illustrations show the exact technic. He has applied the method in six cases and consolidation followed rapidly in five and more slowly in the sixth patient.

**132. Pathology of the Liver.**—Gundermann found that ulceration developed in the stomach or duodenum in guinea-pigs after the left branch of the portal vein had been ligated, thus cutting *off* three-fourths of the liver. The *clinical* picture that resulted, the findings *in* the *urine* and after death, were all typical of true uremia, although a uremia of liver origin seems paradoxic. These experiences suggested that perverted functioning of the liver may be the cause of uremia in man. A number of facts that have been recorded sustain the assumption of the dependence of kidney functioning on the liver. In further experiments he ligated the common bile duct and the resulting cholemia also presented the clinical picture of uremia except for the absence of convulsions. The clinical symptoms and the findings after death were so closely alike under all these circumstances that the same causal moment must be postulated for both. *It may* be wise to drop the term "uremia" for "hepato-renal intoxication," and call "cholemia," "hepato-cholic intoxication."

**134. Heart-Block Under Salvarsan.**—Fuchs' patient was in the *later* period of the secondary manifestations of syphilis, the heart findings normal. He was given up to 2.3 gm. salvarsan in the course of *nine* weeks. Forty-eight hours after *the last intravenous* injection of 0.6 gm. of salvarsan, actual heart-block developed, the pulse dropping from 80 *to 40; the* diagnosis of heart-block was *confirmed* by the electrocardiogram. Fuchs explains this occurrence as due to the destruction of a nest of spirochetes in the bundle of His by the fifth injection of salvarsan. The *endotoxins* liberated by this *destruction of spirochetes at this point* caused such disturbance *in the bundle* that the heart-block resulted. As the toxins were absorbed, conditions returned to *normal;* in seven days in this case.

**135. Primary Diphtheria of the Lung.**—David states that a boy of 9 was *taken* with what was apparently pneumonia of the left lower lobe terminating in a crisis and followed by slight pleurisy. The child was apparently doing well when *suddenly he seemed to be suffocating* but was relieved by inhalation of oxygen and epinephrin. A pneumonia process had developed in the right lower lobe and the bronchi and trachea *became obstructed so that an emergency tracheotomy* was required. *Diphtheric* membranes were expelled through the opening; antitoxin was injected but the child died the thirteenth day after his first symptoms. Diphtheria bacilli were found in the lungs and air passages in pure cultures.

### Virchows Archiv, Berlin

*CCXIV, No. 1, pp. 1-160*

141 **Pathology of the Thymus.* C. Hart.
142 Effect of the Thymus on the Organism. Y. Yokoyama.
143 *Relation of the Thymus to Adrenal Secretion. L. Adler.
144 Early Stage of Fibrosis in Tuberculous Lungs. (Ueber Karnifikation in tuberkulösen Lungen.) W. Ceelen.
145 A Normal Substance in the Prostatic Epithelium of Men and Bullocks which has the Property of Double Refraction. E. Sehrt.
146 Case of *Malignant Neuroblastoma of the Sympathetic Nerve.* N. Auitschkou.
147 *Histology of Nephritis Caused by Vinylamin.* Oka.

**141. Pathology of the Thymus.**—Hart finds that the thymus may persist and become enlarged but the *functioning may be* subnormal. The so-called status thymico-lymphaticus is due *not* to excessive thymus function but to a constitutional abnormality expressing itself in disturbances of the whole internal secretory system. The enlargement of the thymus is *only* one of its manifestations. The hyperplastic thymus seems to have a toxic effect *on* the heart. In many cases of exophthalmic goiter, enlargement of the thymus precedes the appearance of thyroid symptoms.

**143. Relation of the Thymus to Adrenal Secretion.**—*Adler* concludes from his research that the thymus secretion has the *effect of lowering the tonus* of the vascular system. Therefore, if the thymus secretion is increased, the *adrenal* secretion must also be increased to overcome this hypotonic *effect.*

### Wiener klinische Wochenschrift, Vienna

*October 23, XXVI, No. 43, pp. 1737-1784*

148 Pernicious Anemia. E. v. Neusser.
149 Radium in Therapeutics. (*Radium* als Heilmittel.) W. Falta.
150 *The Blood in Werlhof's Disease. (Blutgerinnungsfähigkeit, Viskosität und Blutplättchenzahl bei Morbus maculosus Werlhofi.) O. Steiger.
151 Stenosis *of* Left Pulmonary Vein plus Paralysis of Left Recurrent Nerve; Four Cases. B. Purjesz.
152 Medical Inspection of Schools. (Zur *Schularztfrage.*) A. Schattenfroh.

**150. The Blood in Werlhof's Disease.**—Steiger gives the details of his research in two cases of *this disease in* which numerous *tests* were applied. The results showed *that* the coagulating power *of the blood* was very much reduced; there is evidently lacking some substance or substances, or they are inert for some reason, which are necessary *for coagulation.* The viscosity is also much reduced, as also the number of blood *platelets.*

### Zentralblatt für Chirurgie, Leipsic

*October 25, XL, No. 43, pp. 1657-1704*

153 *Tetany with Abdominal Disease a Bad Sign. E. Bircher.
154 *Acute Congestion of the Liver from Acute Cardiac Insufficiency. (Ueber perakute Leberschwellung.) M. v. Brunn.

153. **Tetany with Peritonitis.**—Bircher has made a special study of symptoms suggesting tetany among 537 patients with various stomach and intestinal affections. They were noted in twenty-eight cases, and twenty-two of these patients died; all had peritonitis from perforation of a gastric or duodenal ulcer or appendix or from ileus, except in one case of fatal postoperative dilatation of the stomach and three fatal cases of peritonitis from other causes. No symptoms suggesting tetany were noted in twenty-five cases of simple gastric ulcer, nor in eighty-five of gastric cancer or hundreds of cases of simple appendicitis. The conclusion seems evident that absorption of toxins from a badly diseased peritoneum is responsible for the tendency to tetany, and consequently signs of it render the prognosis grave, especially tonic twitching in the arms and legs, the Chvostek facialis sign and the Trousseau sign. In a number of the cases it proved possible also to elicit the Schlesinger leg sign.

154. **Acute Congestion of the Liver.**—Von Brunn reports a case similar to the three recently published by Ortner and summarized in these columns November 1, p. 1670. Brunn's patient was a young man suddenly taken with abdominal pain increasing to extremely severe collapse in twenty-four hours. Examination then showed the heart with normal outlines, sounds pure, pulse 22 with irregular intervals, the abdomen retracted, the upper portion tender and stiffening at any attempt at palpation, the lower portion not tender, moderate dulness over the right upper abdomen, extending to below the umbilicus. The diagnosis veered toward perforation of the stomach, but the exploratory laparotomy disclosed no signs of inflammation and only a much enlarged liver and an enlarged and tough spleen. Relief was almost immediate after the exploratory operation, and the young man was soon completely restored. Eleven days later the heart was found extending a finger-breadth beyond the left nipple line and a systolic murmur varying in intensity was audible over the entire heart. This murmur was still perceptible nine days later, but the liver was apparently entirely normal. He explains the acute congestion in the liver in the same way as Ortner, Nature driving the blood into the liver in case of acute insufficiency of the heart, thus giving the heart a chance to recuperate as by a venesection.

### Zentralblatt für Gynäkologie, Leipsic

*October 25, XXXVII, No. 43, pp. 1581-1612*

155 Sterilization of Pregnant Tuberculous Women. (Erfolge und Technik der einzeitigen Schwangerschaftsunterbrechung und Sterilisierung bei Tuberkulose der Lungen.) P. Werner.
156 Serotherapy of Eclampsia. (Ueber Schwangerschaftstoxikosen und ihre Behandlung mit Serum und Ringer'scher Lösung.) F. Engelmann.

### Zentralblatt für innere Medizin, Leipsic

*October 25, XXXIV, No. 43, pp. 1073-1096*

157 Blood Findings, Especially Eosinophilia, with Spring Catarrh. (Blutbefunde beim sog. Frühjahrskatarrh.) Steiger and Strebel. Commenced in No. 42.

### Gazzetta degli Ospedali e delle Cliniche, Milan

*October 21, XXXIV, No. 126, pp. 1319-1326*

158 *Treatment of Pyelitis by Lavage of the Renal Pelvis. (Sulla cura delle pieliti col cateterismo ureterale e lavaggio del bacinetto renale.) F. Cuturi.

158. **Local Treatment of Pyelitis.**—Cuturi insists that direct medication of the kidney pelvis through the ureter catheter is absolutely indispensable in all cases of pyelitis except those of tuberculous or concrement origin. He flushes out the pelvis in this way every day and instills a 1, 2, or 4 per cent. solution of silver nitrate not oftener than once in three or four days, as a rule, washing it out well afterward. In a case of bilharzia pyelitis reported he injected 5 c.c. of a 1 per cent. solution, rinsing it out after a few minutes. The pain was relieved at once. The procedure was repeated ten times on alternate days, gradually increasing the strength to 3 per cent., and a few supplementary times at week or fortnight intervals later. The patient was soon clinically cured. Eight applications conquered the pyelitis in a gonococcus case described and five in a colon-bacillus case of puerperal pyelitis.

### Rivista-Ospedaliera, Rome

*October 15, III, No. 19, pp. 837-875*

159 *Hereditary Ataxia in Pellagrin Family. L. M. Ruggieri.
160 Medical Fees in Ancient Times. (Gli onorari dei medici nell'antichita.) P. Picca.

159. **Friedreich's Disease in Brother and Sister.**—The first symptoms of the ataxic paraplegia developed at about the age of 12 in the brother and sister whose cases are reported. The patients are now 27 and 16. The young man had malaria of the tertian type as a youth, and all the members of the family show more or less signs of pellagra. Ruggieri discusses whether the pellagra may have been responsible for the disease. The type of paraplegia and ataxia seems to be identical in both. The disturbance in gait developed gradually, fully two years elapsing before the ataxia was well defined. The illustrations show the typical deformity of the feet.

### Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

*September 27, II, No. 13, pp. 985-1064*

161 *Fatal Morphin Poisoning or Fatal Diabetic Coma? P. K. Pel.
162 Fermentation at 46° as Test for Drinking Water. (De gistingsproef bij 46° als hulpmiddel bij wateronderzoek.) C. Eijkman.
163 *Improved Technic for the Wassermann Reaction. G. Kapsenberg.
164 *Traumatic Neurosis. P. B. de Haan.

*October 4, No. 14, pp. 1065-1152*

165 *Diphtheria. J. L. Labberté and L. Talsma.
166 *Congenital, Familial Edema of the Legs. J. C. van Vliet.

161. **Poison or Diabetes?**—Pel discusses a recent medicolegal case to emphasize the necessity for a body of qualified medical experts appointed by the state to pass on all the forensic questions in cases like the one described. A man of 41 died with symptoms of diabetic coma. Weeks later, 0.0256 gm. of morphin was found in the exhumed body. Only the chemical diagnosis had weight with the court at the trial of the person suspected of having poisoned the deceased. All the clinical symptoms of the diabetic coma were systematically ignored in the evidence although they had been very prominent, in contrast to the symptoms from the morphin.

163. **Improved Technic for the Wassermann Test.**—Kapsenberg advises the use of the water-bath instead of incubating the test-tubes for the Wassermann test. This materially shortens the time required for the test. Half an hour is sufficient to read the results when the water-bath is used. The test-tubes are affected by the temperature of the water much sooner than in an incubator, and he states that the findings are more reliable. He says further that it is often difficult to procure fresh material for the antigen and, as usually prepared, it is not durable. These drawbacks can be avoided by using human heart tissue for the purpose, prepared in the form of a dry powder which is always ready for use and seems to keep perfectly. The antigen prepared from the heart powder according to his method is not hemolytic and does not inhibit the hemolysis from the complement. He never witnessed pronounced inhibition of hemolysis with a non-syphilitic serum.

164. **Traumatic Neurosis.**—The accident to the foot bringing on the neurosis occurred while the letter carrier was on duty. De Haan discusses in connection with this case the various phases of workmen's compensation and accident insurance. He warns that the indemnity should not be large in such cases, as the patient must learn to be self-reliant and not give up to chronic invalidism and thus exert a bad influence on subsequent cases of the kind. The amount of earning capacity left for the same or another occupation is also an important factor in estimating the compensation to be allowed.

165. **Diphtheria.**—There were 130 cases of diphtheria in the last two years at Krommenie, with a population of only 4,000. A careful epidemiologic study of all the cases is here summarized. There was paralysis of the heart in 34 cases and seven in this group died; 15 cases of paralysis of the soft palate;

4 of accommodation, and 1 of the internal rectus muscle; 3 of the back and 1 of the calf muscles, but the paralysis did not prove permanent in any instance. On account of the apparent mildness of the epidemic, antitoxin was applied in only 42 cases and 20 of these children had paralysis in some form; in 4 the paralysis of the heart proved fatal. Of the 88 children not given antitoxin, 3 died of cardiac paralysis of the 11 who had paralysis in some form. Of the 12 given antitoxin the first day, 6 developed paralysis and 1 died. Of the 17 receiving the antitoxin the second day, 8 developed paralysis and 2 died of cardiac paralysis. Of the 13 children who were given antitoxin at a still later date, 6 developed paralysis and 1 died from heart failure and 1 from the severity of the diphtheria. The paralysis seemed to occur in waves during the epidemic, some periods furnishing far more cases than others. Ninety-five bacillus carriers were found among 1,378 children tested for the bacilli. The carrier children were dismissed from school but no instance of infection from them is known. The epidemic, however, died out when the schools were closed. A number of the throat smears were negative at several examinations but later gave positive findings.

166. **Familial Edema of the Legs.**—Van Vliet gives the chart of a family in which congenital edema of the legs occurred in thirteen members in four generations, ten males and three females. In the six clinical cases no cause for the familial edema could be discovered.

### Brazil-Medico, Rio de Janeiro

*September 22, XXVII, No. 36, pp. 378-389*

167 Acute Inflammation of Undescended Testicle. (Ectopia testicular.) F. Luz.

*October 1, No. 37, pp. 390-401*

168 Gait in Organic Hemiplegia. (Nota sobre o andar lateral na hemiplegia organica.) A. de Castro.

### Semana Medica, Buenos Aires

*September 25, XX, No. 39, pp. 696-756*

169 Operative Treatment of Extreme Myopia. L. G. Doods and A. Gowland.

170 History of Cholelithiasis. J. M. Jorge.

### Hospitalstidende, Copenhagen

*October 8, LVI, No. 41, pp. 1197-1236*

171 *Impressions of America. (Indtryk fra en Rejse i Amerika, Maj-Juli, 1912.) T. Rovsing.

*October 15, No. 42, pp. 1237-1256*

172 Cultivation of the Virus and Parasites of Poliomyelitis, Rabies, Scarlet Fever and Variola. H. Noguchi.

*October 22, No. 43, pp. 1261-1292*

173 *Polypous Gastritis. E. Meulengracht.

171. **Impressions of America.**—Rovsing depicts in flattering terms his impressions during his recent trip to America. He compares the various surgical centers he visited and the technic of the surgeons, and remarks that the tendency to copy after European technics and models is a distinct hindrance to the development of an independent surgery in America. He adds that American surgeons believe so implicitly in the supremacy of European surgeons that the result is a certain lack of confidence in themselves.

173. **Polypous Gastritis.**—The findings are illustrated of the gastritis with production of polyps discovered at necropsy of a woman of 66 and a man of 82. It had caused slight or no clinical symptoms. There was no sign of cancerous degeneration. Complicating malignant disease is known in only four of the twenty-four cases on record of polypous gastritis.

### Hygiea, Stockholm

*September, LXXV, No. 9, pp. 849-990*

174 *Treatment of Empyema of the Pleura by Tapping and Inject- [illegible] and Glycerin. G. Nyström.

175 * [illegible] from Chilling. O. Lindbom.

176 *Syphilis of the Lung. [illegible] Lindvall and J. Tillgren.

174. **Empyema of the Pleura.**—Nyström reports in full fourteen cases of pleural empyema treated by tapping and injection of formaldehyd in glycerin. The results were not encouraging, and he says this method should by no means take rank with thoracotomy. Helling has been more successful with it, and Maldarescu reported in 1910 good effect from repeated injection of 10 to 12 c.c. of a 10 per cent. alcohol solution of alphanaphthol in seven cases of empyema.

175. **Hemoglobinuria from Chilling.**—Lindbom reports the minute details of a typical case of paroxysmal hemoglobinuria. The patient was a sailor of 46 and the attacks could be brought on by holding the hands in ice-water for fifteen minutes. The Wassermann test was positive. Some benefit was derived from cholesterin given in six intramuscular injections in the dose of 0.5 gm. cholesterin, in a 10 per cent. suspension in physiologic salt solution. The Wassermann reaction became negative after this, and the test chilling of the hands induced only a rudimentary attack of hemoglobinuria, and there was no further attack until forty days after the close of the treatment. Cholesterin was given later in an oil emulsion by the mouth, but it did not display any efficacy by this route as a typical attack followed next day on the test chilling of the hands. As cholesterin checks the Donath-Landsteiner reaction in the test-tube, Lindbom suggests that the autolysin involved in this reaction and the substances giving the Wassermann reaction may be identical.

176. **Pulmonary Syphilis.**—In the two cases described the findings in the lungs were not actually specific for syphilis, but the changes in the lungs were accompanied by adjacent lesions of unmistakable syphilitic nature, and the arteries also showed signs of syphilitic injury. The first case is interpreted as a true syphilitic affection of the lung; the second case as merely a patch of hepatization in the lung of a syphilitic. The first patient had no history of tuberculosis; the present lung affection had run its course in less than a year; there were no consonant râles and the sputum was merely catarrhal.

### Ugeskrift for Læger, Copenhagen

*October 9, LXXV, No. 41, pp. 1657-1684*

177 *Combination of Various Forms of Arhythmia. O. V. C. E. Petersen.

178 *Hereditary Tendency to Hemeralopia. C. F. Heerfordt.

*October 16, No. 42, pp. 1685-1716*

179 The Virus of Fowl Leukemia. (Undersøgelser over Hønseleukaemiens Virus.) V. Ellermann.

180 Appendicitis in Femoral Hernia; Two Cases. H. Kaarsberg.

177. **Combined Arhythmias.**—Petersen reports four cases of a combination of various forms of arhythmia. In the first a man of 65 had complete heart-block associated with pulsus alternans. In the second case, the complete heart-block was associated with auricular flutter. In the third, the Adams-Stokes syndrome developed probably as a manifestation of poisoning from digitalis. Poisoning from digitalis was also probable in the fourth case in which auricular flutter was accompanied by coupled beats (bigeminia cordis). The appearance of coupled beats warns to suspend the digitalis, as a rule, but in the case described conditions grew so much worse on suspension of the digitalis for a few days that it was resumed again. The various curves of these cases are compared and the necessity for close supervision of patients taking digitalis is emphasized anew. The signs of intoxication may develop suddenly, even before the full therapeutic action has been manifested. Pulsus alternans is easily overlooked, he remarks, but it can generally be diagnosed by applying the cuff to the upper arm. Treatment is mainly by bed rest and a diet to spare the heart. Digitalis is not required unless for severe symptoms of insufficiency, and then only with great caution; it may correct the pulse in some cases but there is no doubt that pulsus alternans may develop as a result of digitalis poisoning. Auricular flutter with complete heart-block is not corrected by digitalis; the auricular flutter persists unmodified as a rule.

178. **Inherited Hemeralopia.**—Heerfordt explains night blindness and day blindness as the result in the majority of cases of a torpid condition of the retina, which in turn is the result of a general influence on the functioning of the retina from a defective nutritional condition. This so-called idiopathic form is important in general practice as the disturbance is so typical and as it is by no means rare, while it responds so promptly and effectually when the diet is changed to include proper amounts of fat and egg albumin. He urges practitioners to be on the lookout for it in children.

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# SHOCK *

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The theory of shock so ably advocated by my gifted friend Professor Henderson and my theory may in many important respects be harmonized. It seems best, however, to leave that to the future and to proceed at once to the presentation of the summaries of a long series of experiments and clinical observations in support of the kinetic theory which I have proposed elsewhere. This theory is called the kinetic theory because it is based on the phenomena and the consequences of the transformation of latent energy into kinetic energy as an adaptive response to environmental stimuli.

In this paper, therefore, I shall discuss the pathology of traumatic shock; of emotional shock; of toxic and foreign proteid shock; and of drug shock. These several forms of shock will be considered in their acute and in their chronic stages and certain probable relations will be indicated between the several forms of shock and certain diseases, such as indigestion, neurasthenia, glycosuria, Graves' disease, cardiovascular disease and nephritis.

Let me at once state my principal conclusion—that all forms of shock are caused by overstimulation and consequent exhaustion; that the brain-cells show physical changes corresponding to each stage of the cycle of shock, and that with each shock-producing agency which I have studied there is shown in the brain-cells a hyperchromatic stage followed by a hypochromatic stage.

The organs of the body especially involved in shock are certain organs whose function is that of converting latent energy into kinetic energy in response to adaptive stimulation. These organs—among which are the brain, the thyroid, the adrenals, and the muscles—I have called the kinetic system because of this peculiarly kinetic function. In response to environmental stimuli of any sort these organs convert latent energy into motion or into heat. In this thesis, however, I shall consider only the conversion of latent energy into motion as a response to the need of self-preservation against physical injury or infection.

As evidence, will be presented clinical and experimental observations of the energy-producing results of physical injury alone; of physical injury under inhalation anesthesia; of the emotional stimulation of fear alone; and of foreign proteid and toxic stimulation alone; and their results will be considered in their relation to the brain, the adrenals and the thyroid.

## TRAUMATIC SHOCK

A working histologic standard for the brain was established and compared in a large number of brains with the immediate and later effects of physical injury under inhalation anesthesia in an intact animal and in a spinal dog; of physical injury in dogs with crossed circulation; and of physical injury, within the territory of anesthesia, in dogs under local anesthesia; of injections of toxins; of injections of strychnin and morphin; of various inhalation anesthetics; of severe hemorrhage and of fatigue from both physical exertion and prolonged wakefulness.

In case of physical injury alone inflicted on normal dogs under anesthesia, in the brain-cells was found first a stage of hyperactivity characterized by hyperchromatism; and later a stage of exhaustion characterized by chromatolysis, by alteration of nucleocytoplasmic relation, by rupture of the nuclear and the cell membrane and, finally, by disintegration. These changes were most marked in the cortex and the cerebellum, less marked in the medulla and in the cord.

The brain-cells showed no change when the trauma was limited to territories disconnected from the brain by severing the spinal cord, or by local anesthetization. When the circulations of two dogs were crossed and but one dog was traumatized, brain-cell changes were found only in the dog traumatized. Dogs overtransfused and traumatized showed brain-cell changes. Under nitrous oxid the brain-cell changes after equal trauma caused about one-third as much change as under ether. When the vitality was previously reduced by emotion, by physical exertion, by toxins, by infection, by hemorrhage, by excessive thyroid feeding, by adrenalectomy—or by any cause that reduces the vital power — greater changes were found after equal trauma, the endurance of the animal being in proportion to its vitality at the beginning of the experiment.

Testing the effects of shock-producing traumatism on the output of epinephrin by Cannon's method I found no increased epinephrin output resulting from trauma under anesthesia. In addition there were no gross changes observed in the thyroid in either the laboratory or the clinic as a result of shock-producing trauma.

From these observations I conclude that ether anesthesia offers no protection to the brain-cells from the effect of trauma; and that the lipoid-solvent anesthetics break the arc causing consciousness beyond the brain-cells somewhere in the efferent path; hence the afferent stimuli reach and modify the brain-cells as readily as if no anesthetic had been given. I conclude therefore that the brain-cell changes are due to the discharge of energy in a futile effort to escape from the injury.

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* Paper read before the Seventeenth International Congress of Medicine, London, England, August 6-12, 1913.

### EMOTIONAL SHOCK

In rabbits subjected to the emotional stimulus of fear alone the brain-cells showed precisely the same changes as those which resulted from physical injury, namely, an immediate stage of hyperchromatism and a later stage of chromatolysis: a disturbance of the nucleoplasmic relation and the final disintegration of many cells.

As a result of strong fear repeated daily for two weeks as many as 18 per cent. of the Purkinje cells were actually destroyed, and many animals died. In cats the emotion of rage caused a striking increase in the output of epinephrin, but in cats subjected to fear and rage a month after division of the major and the minor splanchnic nerves, there was no increase in the output of epinephrin. In rabbits acute fear caused a rise in temperature of from 1 to 3 degrees, excepting in thyroidectomized animals whose temperature remained subnormal. In rabbits nephritis often resulted from repeated fright.

### TOXIC AND FOREIGN PROTEID SHOCK, ANAPHYLACTIC SHOCK

To determine the histologic changes produced by toxic and foreign proteid shock, and by anaphylactic shock, the brains of many human beings who had died of infections and of eclampsia were examined, and in the laboratory were studied the brains of many animals in which there had been injected toxins of streptococci, staphylococci, colon bacilli, gonococci and tetanus bacilli; the brains of animals to which there had been given intravenously peptones, leucin, skatol, extract of feces, alien blood-serum; of animals in anaphylactic shock; of animals in which placental extract had been injected. In all instances observations were made as to the effect of the injections on the epinephrin output, and the brain-cell changes. In every instance the brain-cells showed precisely the same changes as were seen under traumatic injury, and emotional injury—first a stage of hyperchromatism, followed by a stage of chromatolysis and cell disintegration. Of special interest was the fact that these various toxins and foreign proteids, as well as anaphylaxis and placental extract, produced a large increase in epinephrin output. But if the nerve-supply of the adrenals had been first divided, then these agents caused no increased output of epinephrin; or if deep morphin narcotization had been first induced there was no increased epinephrin output in toxic and anaphylactic shock.

### DRUGS—ANESTHETIC, NARCOTIC AND STIMULANT

Many observations of the brain-cells and the epinephrin output were made after the administration of ether, urethane, nitrous oxid and morphin. None of these caused either brain-cell changes or increased epinephrin output.

Here again it was of special significance to note that, under heavy morphin dosage, there was no increased output of epinephrin as a result of anaphylactic shock. It was found also that the normal output of epinephrin was diminished by morphin. Strychnin, on the other hand, caused brain-cell changes of precisely the same type as did the emotions, toxins, and foreign proteins, that is, at first hyperchromatism and later chromatolysis; and there was also increased epinephrin output. Previous division of the adrenal nerve-supply prevented the increased output of epinephrin.

These experimental results may be summarized as follows: All the factors that cause the activation of the kinetic system, whether emotional, toxic, foreign protein, or drug, produce identical brain-cell changes and increased epinephrin output. On the other hand, the anesthetics and the narcotics cause neither brain-cell changes nor increased epinephrin output, while strychnin causes both. Clinically, it is known that those agencies that in my experiments were proved to cause an increased activity of the brain and the adrenals, also aggravate cases of Graves' disease. It is known also that in those cases of Graves' disease in which changes in the size of the thyroid may be noted, increase in its size is seen as a result of emotional excitation; of infections; of toxemia, and of intense physical and mental work. There is strong clinical evidence, therefore, of the activation of the thyroid by the same influences that activate the brain and the adrenals.

I have shown that in traumatic shock, emotional shock, foreign protein shock, and strychnin shock, identical physical changes in the brain-cells are found. Excepting in traumatic shock under inhalation anesthesia the adrenal glands are activated by the same agencies that cause work changes in the brain. Clinically it is known that the same influences cause thyroid activation.

I conclude, therefore, that shock is a work-exhaustion phenomenon; that the brain, the adrenals, the thyroid and the muscles have but one way of responding to stimuli; and that the conversion of energy is through the activity of these kinetic organs. What work is done in response to foreign protein stimulation? Through the heat-producing activity of the kinetic system foreign proteins such as bacteria are destroyed. Since heat interferes with the growth of bacteria, I must believe that fever is an adaptive reaction to the presence of bacteria in the body and that it is produced by the conversion of latent energy into heat through the same mechanism that converts latent energy into motion. Hence after stimulation by foreign proteins with resultant fever the work changes seen in the brain, the thyroid, the adrenals, and in all parts of the kinetic system are the same as the work changes seen after the conversion of energy into motion.

Shock, then, is the result of an intense stimulation of the kinetic system which leads to physical changes in the kinetic system and which if carried far enough exhausts the system and even destroys some brain-cells. The kinetic system is constantly activated so long as there is life, but normal activation does not produce exhaustion. If normal activity of the kinetic system be exemplified by walking, shock might be exemplified by the exhaustion caused by a Marathon race. The differences between normal processes and shock is that of intensity, not of kind. From these premises it becomes obvious that the exclusion of both traumatic and emotional stimuli will wholly prevent the shock of surgical operations.

When the kinetic system is continuously or intermittently overstimulated through a considerable period of time, so long as all the links in the kinetic chain take the strain equally, the result will be excessive energy conversion, excessive work done. Usually under stress, however, some one link in the chain will be unable to take the strain and then the evenly balanced work of the several organs of the kinetic system is disturbed. If the brain does not take the strain, then neurasthenia, nerve exhaustion, or even insanity, will follow. If the thyroid is not able fully to take the strain, it undergoes hyperplasia, which in turn may result in a colloid goiter or in exophthalmic goiter. If the adrenal does not take the strain, there may be developed cardiovascular disease or glycosuria.

From the foregoing one is able to understand the muscular weakness following fever; one can understand why the senile have neither muscular power nor strong febrile reaction; why long-continued infections produce pathologic changes in the organs constituting the kinetic chain; why the same pathologic changes result from various forms of activations of the kinetic system. In this hypothesis we find a reason why cardiovascular disease may be caused by chronic infection, by autointoxication, by overwork, or by emotional excitation. We see now that the reason why we find so much difficulty in differentiating the numerous acute infections from each other is that they play on the same kinetic chain. Our postulate harmonizes the pathologic democracy of the kinetic organs, for it explains not only why in many diseases the pathologic changes in these organs are identical, but why the same changes are seen as the result of emotional strain and overwork. It can thus be understood how either emotional strain or acute or chronic infections may cause either exophthalmic goiter or cardiovascular disease; how chronic intestinal stasis with the resultant absorption of toxins may cause cardiovascular disease, neurasthenia, or goiter. Here is found an explanation of the phenomena of shock, whether the shock be the result of traumatic or psychic stimuli, or of a surgical operation with its combination of both psychic and traumatic elements.

This conception of the kinetic system has stood a crucial clinical test by making possible the shockless surgical operation. It has offered a plausible explanation of the cause and the treatment of Graves' disease. Will this kinetic theory stand also the clinical test of controlling that protean disease bred in the midst of the stress of our present-day life? Present-day life in which one must ever have one hand on the sword and the other on the throttle, is a constant stimulus of the kinetic system. The force of these kinetic stimuli may be lessened at the cerebral link by intelligent control; a protective control is empirically attained by many of the most successful men. It may be broken at the thyroid link by dividing the nerve-supply, reducing the blood-supply, or by partial excision; or if the adrenals feel the strain, the stimulating force may be broken by dividing their nerve-supply. No theory is worth more than its yield in practice, but the straw of clinical evidence from a single case points toward a new method of control of cardiovascular disease. I have proved that animals remain in apparently good health after the division of their adrenal nerve-supply, and in one human patient with cardiovascular disease in whom the adrenal nerve-supply was divided the blood-pressure gradually fell and remained at a lower level than prior to the operation. The patient is in good condition. As it stands alone, however, this case proves nothing.

### SUMMARY

There is a group of organs whose function is the conversion of potential into kinetic energy. These organs form a kinetic system. Among the organs forming this system are the brain, the thyroid, the adrenals, and the muscles. The kinetic system converts latent energy into motion or heat in response to adequate stimuli. If the stimuli are overwhelmingly intense, then the kinetic system—especially the brain—is exhausted, even permanently injured. This condition is acute shock. If the stimuli extend over a period of time and are not so intense as to cause an immediate breakdown or acute shock, their repetition may cause the gradual exhaustion of the kinetic system—this condition may be called chronic shock. Either acute or chronic shock may be measurably controlled by weakening or breaking the kinetic chain at any point. This has already given us the shockless operation and it opens a possibility of controlling certain chronic diseases of that intensely kinetic organism, civilized man.

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# THE RÔLE OF THE TENDO ACHILLIS IN THE ETIOLOGY OF WEAK-FOOT *

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It is a modern conception that weak-foot, or flat-foot, (insufficientia pedis—Schanz) is primarily caused by a loss of balance of the muscles of the leg and foot; that the interference with the proper function of these various groups of muscles which is caused by abuse, disuse, injury or disease, will be followed by weakness of one or more of these muscular groups; that from this there results a disturbed relationship of function between the various individual muscles of the leg, and, finally impairment of the carrying power of the foot.

Huebscher[1] has shown that the group of muscles forming the Achilles tendon (gastrocnemius, soleus and plantaris), has the same volume as all the remaining muscles of the leg combined and probably for that reason has approximately the same relative strength. It is not to be wondered at that interference with the proper function of this powerful group of muscles, caused by shortening, would interfere materially with the proper use of the foot.

While the relationship of the short Achilles tendon to weak-foot has been written of from time to time, sometimes very fully, sometimes in cursory fashion, there are still a great many able articles which treat of the subject of weak-foot, yet which devote no time to this etiologic factor.[2] That a short Achilles tendon often accompanies a rigid weak-foot is well known.[3] In fact, a part of the proper treatment of such a rigid weak-foot consists either in division or in the lengthening of this large tendon.

The fact that a shortened Achilles tendon is a causative factor in many cases of beginning weak-foot is not of new observation. Schaffer[4] of New York was the first in this country to call attention to this. His article on the subject is worth reading in full. Shortly before publishing this paper, Schaffer made the statement, perhaps a little too comprehensive, that nearly every case of flat-foot which he sees presents a shortened tendo Achillis.

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* Read in the Section on Orthopedic Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Huebscher: Ueber den Pes Valgus, Ztschr. f. Orthop. Chir., 1904, xiii, 73.

[2] Osgood, R. B.: The Comparative Strength of the Abductor and Adductor Groups in the Foot, Am. Jour. Orthop. Surg., 1909, v, 298. Blodgett, W. E.: Analysis of One Thousand Cases of Static Foot Trouble, Am. Jour. Orthop. Surg., 1904, ii, 146. Ochsner, E. H.: Potential and Acquired Static Flat-Foot, The Journal A. M. A., Nov. 23, 1907, p. 1742. Hovorka, Otto: Die Bisherige Erfolge der Plattfuss-Chirurgie, Ztschr. f. Orthop. Chir., 1906, xvi 328. Gocht: Sehnenoperation bei Pes plano-valgus, Ztschr. f. Orthop. Chir., 1905, xiv, 295.

[3] Schultze, F.: Die Behandlung des statischen Plattfusses mittelst des Redressement forcé und der Sehnenplastik, Ztschr. f. Orthop. Chir., 1904, xiii, 270. Antonelli, I.: Zur Therapie des Plattfusses, Ztschr. f. Orthop. Chir., 1904, xiii, 666. Osgood, R. B., The Treatment of Faulty Weight-Bearing in "Weak" and "Flat"-Feet, Am. Jour. Orthop. Surgery, 1906, iv, 137. Hoffa, A.: Lehrbuch der Orthopädischen Chirurgie, p. 889. Whitman, R.: Orthopedic Surgery, p. 691.

[4] Schaffer, Newton M.: Flat Foot, Its Causes and Treatment, New York Med. Jour., 1897, lxv, 717.

Soon after the publication of Schaffer's paper, there appeared, in the literature, sporadic references to this subject; some authors laying stress on the relationship that exists between the two conditions. Bradford and Lovett[5] distinctively mention this in their text-book as a cause for weak-foot.

The cause of the shortening of the heel cord is often not far to seek when we remember the high-heeled shoes that women wear. Hoffman[6] says: "The high heel, especially the one placed well forward, compels the wearer to stand largely on the front of the foot, which must bear more than its proportionate share of the body weight. The habitual wearing of the high-heeled shoes leads to shortening of the calf muscles through accommodation to the continually assumed attitude. This is probably the reason that a large percentage of middle-aged women *cannot dorsiflex the foot to quite* a right angle without relaxing the calf muscles by bending the knee."

In my own experience I have seen many cases of beginning weak-foot in adolescents who have never worn a high-heeled shoe. For the cause of the shortened heel cord in these cases, I have no explanation. Blodgett[2] and Williams[7] came to almost identical conclusions in two interesting statistical studies regarding the relative frequency with which a shortened tendo Achillis occurs in patients complaining of weak-foot. Neither, however, seems to have considered the possible etiologic relationship of the shortened heel cord to the symptoms. Blodgett, in an examination of 1,000 patients, finds evidence of shortened heel cord in 175 cases, or 17.5 per cent. Williams finds a shortened Achilles tendon in 65 out of 300 cases, or 18.3 per cent. The great majority of Williams' patients with shortened Achilles tendon were women and Williams blames high heels for this condition.

Abbott and Pingree[8] have done some interesting experimental work on the normal balance of the foot. Among other things, they have shown (Experiment 1), that when the heel cord is shortened artificially in a dissected weak-foot, it is impossible to raise the arch to the normal position by traction on the anterior and posterior muscles; but, if the tendo Achillis is divided, that the inner border of the foot can then be easily raised to the desired height. In other words, the tibialis anticus and posticus are working under disadvantageous conditions when the heel cord is short.

Before I knew of the existence of Schaffer's classic work, I was able to demonstrate to myself in a few dissections of the foot that when the heel cord was shortened artificially so that dorsiflexion was impeded, a little more movement of the anterior portion of the foot was made possible by vicarious movement in the mediotarsal joint; this movement being in the sense, not only of dorsiflexion, but also of pronation.

Then I understood why it was that a patient with a shortened heel cord was able to bring the foot a little more toward a right angle when the foot was slightly abducted. In practice, I have found that some of my most obstinate cases of weak-foot present the condition of a shortened heel cord. For the last two years, I have not hesitated to advise section of the tendo Achillis in these cases preparatory to the usual well-accepted forms of treatment of weak-foot, believing that, when present, the shortened heel cord stood in etiologic relationship to the symptoms.

I now have fifteen cases in which the time since operation exceeds one year. All of these patients are walking much better than they did before the operation. From what I can learn, every one is satisfied and pleased with the results of the operation. I have always divided the tendo Achillis subcutaneously, usually cutting it obliquely; occasionally dividing it according to the method of Bayer. One case-report may serve as an example of all of them:

Case 1.—Miss R., aged 38, a housekeeper, stands much of the time, wore high-heeled shoes years ago and comes with typical symptoms of weak-foot. There is pain on arising from bed, also aching feet and inability to walk any distance without discomfort. She has tried all kinds of braces and shoes. Braces and shoes applied by myself gave only moderate relief. Achillotomy advised and done January, 1911. A plaster cast was used for six weeks. Following the removal of the cast there was considerable swelling of the feet for some time, so that the patient became very much worried about it. Properly graded exercises were begun and proper shoes and mechanical supports were adjusted. Two years later, the patient can walk as far as she wants to and has no soreness excepting a little after a hard day's work. The patient is much pleased with the result.

During the last six months I have been operating on these patients under gas anesthesia, thereby eliminating the only possible danger which attended this operation before, namely, that of complications due to ether.

Dr. Schaffer describes in his article an apparatus for slowly stretching the tendo Achillis. Perhaps I should have tried this method before resorting to operative procedures. As the element of time, however, is important to most of these patients, it is my opinion that section of the tendo Achillis probably will always be the quicker method of achieving the desired result, namely, that of lengthening this tendon.

One word further as to the examination of patients: In testing for a shortened heel cord, we must be sure to have the patient's knee straight, for the obvious reason that the insertion of the gastrocnemius is above the knee-joint. With the knee bent, there is a great deal of slack, which is taken up when the knee is extended as in standing.

### CONCLUSIONS

1. Shortened tendo Achillis accompanies at least 16 to 18 per cent. of all cases of beginning weak-foot.
2. There is experimental evidence at hand, easily to be reproduced, that a shortened heel cord can alter the range of motion of the foot and cause eversion to accompany continued dorsiflexion.
3. By simple division of the heel cord, we restore to the foot a certain range of normal motion, which has become lost to it, and without which normal range of motion the foot cannot properly perform its varied functions.

### ABSTRACT OF DISCUSSION

Dr. Charles A. Parker, Chicago: I have not had any experience with the method of treatment mentioned by Dr. Geist, but I wish to speak with regard to the possible action and reaction after the tendo Achillis is cut. It is the only extensor of the arch of the foot behind the ankle. All the structures in the sole are flexors of the arch; and when it is cut, they have a tendency, I suppose, to produce a type of calcaneum that, of course, does not go on to complete development; but it allows the structures in the sole of the foot to develop an arch.

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5. Bradford and Lovett: Orthopedic Surgery, p. 570.

6. Hoffman: Conclusions Drawn from a Comparative Study of the Feet of Barefooted and Shoe-Wearing Peoples, Am. Jour. Orthop. Surg., 1905, iii, 105.

7. [illegible] Static Foot Error in Private Practice, Am. Jour. [illegible], vii, 481.

8. [illegible]: Restoration of Normal Balance of Foot, New [illegible] 08, lxxxvii, 875.

**DR. ROLAND MEISENBACH**, Buffalo, N. Y.: Dr. Geist's paper is very important, from the fact that many cases of weak feet due to the tense calf muscle are overlooked. The paper recalls to my mind two cases which yielded stubbornly, one in a strong, healthy woman who had weak feet and beginning flatfoot, in which I am sure that the prime factor of discomfort was the shortening of the tendo Achillis. Temporary relief was given by stretching the calf muscles. In the other case I tried every means to relieve the condition except section of the tendo Achillis, which was refused by the patient. I think that it is much better to do the open operation in lengthening the tendon rather than to section subcutaneously, especially in adult patients with large tendons, as thereby one is less liable to produce a large callus which may delay convalescence.

**DR. FREDERICK C. TEST**, Chicago: I cannot quite agree with Dr. Geist in calling this condition a true case of weak-foot. It seems to me that weak-foot is due to relaxation of the muscles and ligaments; and that in this condition it is rigidity and shortening of the tendo Achillis, and often of the peronei tendons as well, that is the cause of the trouble. It is more a contraction than a relaxation. I have seen many patients who objected to section of the tendo Achillis, and in these cases I have obtained good results by removing the heel and thickening the sole, so as to lift the front of the foot, and then after a few weeks stretch the shortened heel tendon, thus solving the same mechanical problem along bloodless lines.

Instead of calling such a deformity "weak-foot," I call it the "high-heel hobble."

**DR. NEWTON M. SHAFFER**, New York: This question of the effect of a shortened tendo Achillis on flatfoot is, I think, one that I was the first to bring before the profession. I stated at one time that every case of flatfoot had a shortened heel-cord. I wish to reiterate that statement to-day with a slight modification. It all depends on the way the foot is examined, whether it can be demonstrated or not. The foot, as you know, is abducted in simple flatfoot—not the inflammatory kind—which is the last stage of the condition. If you take the patella as your guide and bring the tarsus immediately under the patellar line and then attempt to get flexion of the ankle-joint, dorsal flexion will stop inside a right angle. Underlying all these conditions may be lack of nutrition.

With a long tendo Achillis and tight plantars, you have a hollow foot, while with a short tendo Achillis and flabby plantars, you have a flatfoot. I have seen the conditions pass from one type to the other. A girl with a hollow foot weakened with ordinary illness will have so much strain thrown on it that the plantar fascia gradually yields and produces flatfoot. I wish therefore to reiterate what I have said before, and still believe to be the truth, that in 90 per cent. of the cases of flatfoot I can demonstrate a short tendo Achillis.

I have come to believe that division of the tendo Achillis is the best method of treating the more advanced and resistant cases.

**DR. EMIL S. GEIST**, Minneapolis: I have not yet encountered a case of excessive callus that gave trouble; hence, since subcutaneous division has been so satisfactory up to date I shall continue with it. We are all, no doubt, familiar with the small epidemics that we see every summer, when the young ladies discard high-heeled shoes and play tennis and other athletic games that bring them down on their heels and require them to put a pull on the tendo Achillis with bad results at times.

I wish to reiterate the statement that this is only one stage. It is necessary to follow up the operation of achillotenotomy with the measures that, in the years gone by, we have already learned to appreciate, namely, proper shoes, braces and exercises.

Regarding the priority of Dr. Schaffer, I would say that the only authority that I have for not mentioning the doctor as being the first to point out the relationship of short heel-cord to weak foot, is Hoffa, who mentions in this connection the name of Krauss. I have been unable to locate the work of Krauss on this subject.

# CERTIFIED MILK *

THOMAS C. McCLEAVE, M.D.
BERKELEY, CAL.

The propaganda for clean milk has been one of the chief factors in the development of the "Social Welfare" movement during late years. In all our centers of population certified milk is an important item in the food supply of the baby and its production engages the attention of many of our best sanitarians and pediatrists.

We find that there is still prevalent in the profession, even where we would least expect it, much misconception as to what certified milk is and what benefit is to be expected from its use. Thus we often hear certified milk spoken of as if it were identical with pasteurized milk, and I have known physicians to advise against the former on the ground that to heat milk made it unfit for infant-feeding, although certified milk is, of course, not heated at all. In THE JOURNAL of the American Medical Association we find the question asked, "Is Certified Milk Safe?"[1] and the emphasis is there laid on the dangers which are inherent in all milks and against which even certified milk cannot absolutely guard. In the *American Journal of Diseases of Children* we find quoted[2] without unfavorable criticism a standard of 30,000 bacteria per cubic centimeter; while in a paper[3] read before this Section last year it is asserted that a "waste of money and effort accompanied the work of many of the charities which confined their efforts to the distribution of clean milk, of which so much was once expected, but which accomplished little more than to help to prove that impure milk plays by no means the most important part in the causation of infant mortality." What the writer of the article doubtless had in mind was the now generally recognized truth that impure milk is but one of the many factors in our tremendous infant morbidity and mortality, and that measures for the prevention of summer diarrhea and similar diseases, which are predicated only on the furnishing of clean milk for children's use, have not been so successful as at first was anticipated; but that these efforts were barren of results as affirmed by the writer of the criticism, is absurd. All agencies intended to improve the living conditions of the children of our poor take their origin from the pure milk movement, and have, as one of their most important functions, the proper feeding of the babies under their control. This means, as a primal necessity, that the milk furnished them shall be clean.

Because of lack of information on this subject among the profession at large, and because of the recent adoption by the American Association of Milk Commissions of a code of requirements which it is hoped will eliminate discrepancies in the requirements of different commissions and which will make the production of certified milk uniform throughout the country, it has seemed to the officers of the association that this was an opportune time to bring to notice the provisions of this code and to make more accurate the general conception as to what certified milk is.

The certified milk movement originated with Dr. Henry L. Coit,[4] who, after several years' ineffectual effort to improve the milk supply of his community through legislation and other ordinary means, devised the plan for a commission consisting of medical men, which, by voluntary supervision and control of methods, by paid expert inspection of dairy work, and by their certification of the product, should undertake, in cooperation with dairymen possessing the requisite intelligence and capital, to make available a supply of milk produced under regulations imposed by themselves, which should fulfil the most exacting requirements of the physician.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Is Certified Milk Safe? Editorial, THE JOURNAL, A. M. A., April 20, 1912, p. 1200.

[2] Mosher, C. G.: Metabolism and Nutrition, Diet. and Hyg. Gaz., March, 1912; abstr., Am. Jour. Dis. Child., October, 1912, p. 256.

[3] Cooley, Thomas B.: Relation of the Infant-Welfare Movement to Pediatrics, THE JOURNAL A. M. A., Dec. 2, 1912.

[4] Dr. Coit's writings are freely quoted without definite reference.

Under the leadership of Dr. Coit, the first medical milk commission was organized in 1893, in Essex County, New Jersey. The term "certified milk" was coined to designate the milk produced under the control of this commission, and was protected by United States copyright. In addition to this, many states have since passed statutes prohibiting the use of the term except on the authority of a properly constituted commission. The movement, originally designed by its author to meet the dire necessities of his own neighborhood, was so successful that similar commissions were organized elsewhere—in New York in 1896, in Philadelphia in 1897, and since then throughout the country—until there is now a total of not less than sixty commissions in twenty-three states, and two in Canada. New York leads with ten, Ohio has six, while California in the extreme West and Massachusetts in the East each have five. The American Association of Milk Commissions was organized in 1906, to institute better methods of propaganda and to unify the work of its component commissions. In California there is also a state association which aims to keep the work within its jurisdiction on the same high plane.

The influence of these commissions has been so profound, not only within the limits of their own immediate activities, but in relation to the improvement of the general milk-supply and all other food products, that they may be classed as one of our most important agencies in public health work; and Dr. Coit, through whose continued ardent advocacy of the cause of pure milk thousands of babies have been saved from needless sickness and death, may properly be named among our great medical philanthropists.

The first step in the acquisition of a supply of certified milk in any community is the organization of a milk commission. This should consist of about five physicians, selected by the county medical society solely because of their known interest in all that the pure milk movement stands for, and perhaps a public-spirited attorney or one or two other lay members should be added to it. Their term of office should be five years, for experience in the work is essential for useful service on a commission, and the personnel should be changed as little as possible. The members receive no pay, and the expense of the work, the fees of the experts, printing, etc., are provided for by a system of assessments on the dairies certified.

An approved and trustworthy dairyman, with financial ability and adequate dairy facilities must then be found, who will agree, in consideration of medical support and an increased recompense in the price of his product, to conduct his dairy, collect and handle the milk in conformity with the requirements of the commission.

Formerly, each commission fixed its own requirements and naturally there resulted a great variety of standards. The code of the American Association was adopted last year only after the most painstaking consideration of its provisions by a committee of able and experienced members, and it may be held to represent the most authoritative conception of the conditions under which milk should be produced for certification. Membership in the association will hereafter depend on acceptance of and compliance with this code, and it is hoped that the heretofore heterogeneous standards of the various commissions will soon be obsolete.

The duties of the members of the commission shall be to enforce the regulations, which, in the code referred to, cover in minute detail every phase in the production of certified milk; to be responsible for personal inspection of the dairy and distributing stations at such intervals as will serve to keep them thoroughly in touch with the management; to provide for competent expert examination of the herd by approved veterinarians, and bacteriologic and chemical analyses of the milk at proper intervals; to maintain such supervision over all matters pertaining to the health of employees as will protect the milk against contamination by pathogenic organisms from those engaged in handling it; and to advance the doctrine of pure milk by private precept, by public lectures, exhibits, literature and all other available means.

The control of the commission over the dairy and the entire process of production and distribution of the milk must be absolute. The hygiene of the dairy is the first consideration. The terrain of the farm must be such that it is well drained and the paddocks and yards shall be kept clean and dry. Rubbish and stable dirt shall not be allowed to accumulate nor shall any insanitary condition be permitted. The water-supply must be pure and ample.

The dairy buildings must be located at a sufficient distance from other buildings, toilets or latrines. dusty roads, cultivated and dusty fields, or other possible sources of contamination. If unavoidably exposed to dust the buildings must be screened with cheese cloth.

The stables must be so constructed as to facilitate the prompt and easy removal of waste products. The floors must be made of non-absorbent material, must be properly graded and drained and have cement gutters at least six inches deep to catch and carry off all manure and drainage. The walls and ceilings should be planned to avoid lodgment of dust and dirt. At least six hundred cubic feet of airspace should be allowed for each cow, with not less than four square feet of window area. The buildings must be screened to prevent the entrance of flies, rats, and other vermin. The greatest cleanliness must be maintained about the premises at all times, the stables are to be washed out twice daily, and all feed and water-troughs kept clean and sanitary.

The proper selection of cows for a certified herd is a matter of importance, a proper admixture of animals of different breeds being frequently necessary to maintain the requisite fat standard. The productivity of each cow in a herd should be recorded and the unprofitable ones weeded out, as a few such in a herd lower its average output very appreciably and entail financial loss to the owner. No cow should be admitted to a certified herd until its freedom from tuberculosis or other disease has been determined by the veterinary expert of the commission, and the entire herd must be subjected semi-annually to a rigid tuberculin test, which shall conform to the rules and regulations of the United States government with respect to tuberculin testing.[5] Veterinary supervision must be maintained at all times and sick cows at once removed from the herd and quarantined or destroyed as the nature of the illness may require. In California there is what should be regarded as a valuable rule in relation to the exclusion of tuberculosis from the herds, namely, when a group of animals from one source is examined for admission to the herd, if more than 10 per cent. react to tuberculin, the entire group is rejected. We do not believe it safe to admit to a certified dairy even non-reactors from herds known to be extensively infected, as this will almost surely permit animals in the incipient stage of the disease to gain entrance. Each animal is identified by a numbered ear-tag or other mark, and a descriptive record is kept of distinctive markings, dates, results of tuberculin tests, etc.

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[5] Circular of instructions for making tuberculin tests, U. S. Bureau of Animal Industry.

Cows should be kept clipped and before each milking must be thoroughly cleansed by brushing and washing, the udders especially being washed clean and dried. All utensils used in handling the milk must be sterilized, and the milkers must wear clean washable suits and carefully cleanse their hands before milking. One of our Western dairies under probationary certification during the past year, has been using milking-machines with which great difficulty was at first encountered in keeping down the bacterial counts, but this is apparently being obviated by experience and minute attention to detail.[6]

The milk must be strained, cooled and bottled immediately after being drawn and the bottles sealed with a cap bearing the name of the dairy and of the certifying commission, together with the date of production or of permissible delivery. The bottles must then be packed in ice in suitable containers for shipment and must reach the consumer within thirty hours, the temperature at the time of delivery not to exceed 50 F.

Chemical and bacteriologic examinations of the milk are to be made at least weekly, and in the event of any deviation from normal standards, tests shall be made daily until the discrepancy has been corrected. If this cannot be accomplished within ten days, certification shall be withdrawn. So delicately balanced may be the organization of a certified dairy and its success so dependent on perfection of technic, that I have known the sudden loss of a cleaner to be at once discovered by the bacteriologist, the added work thrown on the remaining hands and the slight relaxation in methods having resulted in an immediate rise in bacterial content.

The methods that must be followed in carrying out the chemical investigations essential to the protection of certified milk are so complicated that, in order to keep the fees of the chemist within moderate limits, those procedures must be eliminated which are not strictly necessary to demonstrate the quality of the milk. For this reason the determination of the water, the total solids and the milk-sugar is not required as a part of the routine examination by the code of the American Association.

The fat standard is fixed at 4 per cent., with a permissible range of variation of from 3.5 to 4.5 per cent., while the standard for certified cream is 18 per cent., with an allowed variation of 2 per cent. in either direction. The tests recommended are the Babcock, the Leffmann-Beam, and the Gerber.

The protein standard is fixed at 3.5 per cent., with a permissible range of from 3 to 4 per cent., to be determined by the Kjeldahl method, the Gunning or other reliable modification being used, and the factor 6.25 being employed in reckoning the protein from the nitrogen. The protein determination may be omitted except when some special condition renders it desirable.

The chemical examination also includes tests for adding coloring matter and preservatives, among the latter being formaldehyd, borax, boric, salicylic and benzoic acids, and salts of the latter; and tests to determine if the milk has been heated. The specific gravity should be between 1.029 and 1.034.

The bacteriologic standard of the American Association is not to exceed 10,000 bacteria per cubic centimeter of milk, and the presence of pathogenic bacteria excludes the milk from certification. The samples to be examined must be collected by a representative of the commission, in original packages as offered for sale and they must be kept iced until plated, which shall be not later than forty hours from time of milking. Because of the great variation in methods for the bacteriologic examination of milk and the divergent results thereof, the methods to be followed in the examination of certified milk, the composition of the culture mediums, the technic of plating and the period of incubation are all carefully specified, thus affording a proper basis of comparison between milks from different sources. The experts of the commission are required to render written reports of each examination made by them, these to be kept on file in the office of the secretary.

The milk laboratory is a development of the pure milk industry which now, in a number of our cities and in connection with certified dairies, affords the physician an opportunity to order for his little patients milk formulas much more accurately compounded than is possible by home modification, which is a very great advantage in infant-feeding.

The conditions under which certified milk is produced make it impossible that it shall ever constitute a large part of the total milk-supply. As long as we continue to use milk in its natural state, however, we may feel sure that no higher grade of milk can be obtained and that certification will continue to exert an ever-increasing good influence. The one disadvantage urged against it is that of its higher cost in comparison with ordinary milk. This is apparently a valid objection, but it may be stated that in no other combination of foods obtainable in the markets can the same food value be obtained for the price which certified milk commands. The objection, therefore, is more apparent than real.

Chief among its advantages are its known and constant chemical composition and nutritive value; its relative freedom from bacteria of any sort and its practically absolute freedom from pathogenic organisms; its early delivery to the consumer in sealed and iced containers; its purity and freedom from adulteration; and its consequent adaptability to the dietetic requirements of children and invalids.

That these qualities are assured by the guarantee of physicians actuated solely by philanthropic motives in their milk commission activities, merits for certified milk the confidence of the profession and the public. We feel, therefore, that we may expect the unqualified support, especially of pediatrists, and of all those who are interested in the public health.

## ABSTRACT OF DISCUSSION

**Dr. J. W. Van Derslice**, Chicago: I am not a Holstein man, I am a Brown-Swiss man. In the pure-bred Holstein it is practically impossible to run a uniform fat percentage. There is no animal in which atmospheric changes, fright, etc., affect the contents of the milk so much as in the Holstein. Last fall we had a severe thunder-storm; the following day the fat of the Holstein farms dropped to 2.6 per cent. The thunder-storm did not last over fifteen minutes.

Another thing to be considered is the milk-machines. We had one farm with milk-machines and we did not have any trouble with the bacteria count. After we had educated the milkmen to the certified-milk plan they turned out milk of very low bacterial count. We did find that veterinary examination of that herd was important. It was necessary to examine the herd weekly, and practically every time it was necessary to throw out one or more animals on account of mastitis. So the milk-machine was discredited. I hope that next year I can tell you that the milk-machine is the only thing to use. One of the other farms is putting in milk-machines, and we hope that improvements have been made in this machine so that it will not develop mastitis. If we could get machines that would not cause disorder of the udders, the question of the production of sanitary milk would be answered.

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[6] Since writing this paper, certification of this dairy has been canceled.

Dr. Henry L. Coit, Newark, N. J.: In connection with the initial steps made to secure certified milk, I wish to say that unaided I could never have accomplished it. Without the cooperation of the producer my work in the beginning would have been negatived. Had it not been for the loyal cooperation of physicians my plans would have failed. The name of the dairyman who produced the first quart of certified milk should be recorded in history. It is Stephen Francisco. Without the practical dairyman, the medical milk commission could accomplish little.

Had it not been for the loyal support of the representative medical milk commissions this association would not have been founded. Geier, Freeman, Hamill, Tuley and Myers gave the impetus in founding this movement. I wish simply to supplement the kindly reference to me by mentioning the names of others who did constructive work.

Dr. John Zahorsky, St. Louis: In St. Louis we have met great difficulty in keeping the bacteria count down to 10,000 because of the hot weather. Generally we have it down even below this, but in spite of the same care it will run up. The commission has insisted on uniform standards. I still think that there will have to be some variation in standard in order to meet climatic conditions. So far as the effect on the infant is concerned, it does not matter whether the bacteria count is 10,000 or 30,000. There will have to be a minimum and a maximum count, and not a definite fixed line.

Dr. Thomas C. McCleave, Berkeley, Cal.: I do not believe that a dairy which produces milk only under 30,000 has any right to ask for certification by milk commission in any part of this country. The work of North in New York state is probably familiar to you all. We know that he teaches that, under almost any conditions of environment, almost any intelligent dairyman can produce milk of a lower bacterial count than 10,000. In my cities the ordinary market milk is crowding certified milk very closely in the matter of bacteria count, and for us to have on the market in any city a certified milk in which we insist that this count come down to only 30,000 would be most mortifying, when you consider that in that city ordinary market grades of milk may be found to have lower bacterial counts than certified milk. Any dairyman who is not willing to produce his milk under conditions which will guarantee an average of 10,000 or less should not produce certified milk. We have no difficulty in keeping the count below 10,000. Our dairymen themselves would be mortified if we suggested that they come down only to 30,000. The matter of uniformity of standards is, of course, a debatable question. The object of the American Association of Milk Commissions, as I understand it, is to assure to physicians who are not members of the association of milk commissions and the public that when they ask for certified milk in New York or Brooklyn, or Chicago, or San Francisco, or anywhere they know what they are getting. The bacterial count, the care of cows for protection against tuberculosis and all the requirements should be the same. It is even true in this country that there are commissions putting the stamp of guarantee on milk from cows which have not been tested for tuberculosis. The whole propaganda of the milk commissions is discredited by one commission of this kind. We do not expect that every commission will be able to come up to our standards absolutely. In various parts of the country climatic or other conditions may make it impossible to do this; but all we ask is that the commission come up to the standard to the best of its ability. If we have an honest commission the result will be fairly good. When commissions are willing to give their names to something concerning which they know nothing, then we have a product which is misbranded and should come under the ban of the pure food laws. Some members of commissions do not know what certified milk is. That is the reason I wrote this paper—there is so much ignorance as to what certified milk is. In some parts of the country the laity are much better informed along this line than the physicians.

Mr. Stephen Francisco, Fairfield, N. J.: Our plant does not produce certified milk only. The idea is to make certified milk safe for infant feeding, and I pity the producer who does not consider infant feeding above everything else. It takes more than the cattle there to produce the milk desired. The herd has to be examined every day. There is hardly a day that some cow is not taken from our herd for one reason or another, generally not to return. We are learning something every day, through the suggestions of our physicians, bacteriologists, chemists and veterinarians—every one of whom is giving thought to this matter. Certified milk costs between 12 and 13 cents a quart.

Mr. W. E. Miller, Lebanon, Ohio: The cost of certified milk may be estimated in percentages as follows: Wages, 28.26; supplies, 2.40; stable hauling, .31; power and refrigerations, .58; repairs, 1.31; freight, 5.46; feed, 47.23; cost of certification, 8.42; miscellaneous, 4.79; bedding, 1.24.

I have taken the cost of milk from our books for 1912. This covers one year, and I have taken the total cost of all the items that should enter into the problem and have reduced them to percentages.

There is no uniform system of accounting among the producers of certified milk. Each man must take into account local conditions. It is rather hard to compare the results of two men. Perhaps this can be worked out in the near future. If we can arrive at a uniform way of accounting it will help to clear up the cost of production. We know that in some places the production of certified milk is a fad. Men with more money than they need select this method to get rid of it. It seems to me that philanthropy and business do not mix well. If this movement for the production of certified milk is to succeed, it must be put on a sound economic basis. We do not advance far in any business unless the firm profits, and these profits should include a proper compensation for everyone concerned. I have heard of certified milk selling for from 12 to 20 cents a quart. If the milk is the same all over the United States as it should be, then why this difference in price? Some men say that they cannot afford to sell certified milk for 12 or 16 cents. Perhaps there is something in their organization that needs improvement. We should first be sure that we have approximated 100 per cent. efficiency and then, if the price of certified milk is not sufficient to give a fair compensation, it is time to ask for an increase in price. All fair-minded producers are trying to reduce the cost as much as possible. We have organized our force into three divisions —a cleaning division, a feeding division and a milking division, in order to get 100 per cent. efficiency.

The cost of certification, including the cap as well as the inspection, is 8.42 per cent. I think that the consumer should not be burdened with the unnecessary cost of supervision and capping. We should try to secure trustworthy men, so that the milk need not be kept under lock and key. We must, of course, protect the public as much as possible. After the public is protected our supervision should stop.

Another thing that increases the cost of certified milk is the appearance. We have to take into account the psychology of the situation. Things have to look clean as well as be clean. Can anybody tell me in what respect a white suit is any cleaner than a blue suit or a black suit? It simply looks cleaner. If we are to spread this gospel of certified milk among the consumers, among physicians, we must appeal to the eye. The bacteria count may be good, but the people cannot see the germs; they can see the color of the suit, which may have nothing whatever to do with the bacteria count. That is one thing that keeps up the cost of production. The thing that appeals to me is the advantage of bringing certified milk within the reach of the greatest possible number.

These cost items do not include distribution. The milk is in Cincinnati, the freight is paid, but the milk has not yet been distributed to the consumer. This certified milk is distributed with the other milk. It is, therefore, impossible for us to distinguish the cost of distributing certified from other products. If we had nothing but certified milk it would be easier.

**Dr. Otto Geier**, Cincinnati: Will you analyze the cost of certification?

**Mr. Miller**: It includes cap and inspection by the veterinarian, inspection by the bacteriologist and chemist and all charges of that nature.

**Dr. J. W. Van Derslice**, Chicago: What is the price per pint?

**Mr. Miller**: Four and three-quarters cents. Wages and repairs and freight are all higher on certified milk than they are on common milk, and feed also is higher.

**Dr. T. C. McCleave**, Berkeley, Cal.: Mr. Miller has not answered the question adequately. A large part of the cost of certified milk, as compared with ordinary milk, is dependent on the addition of the actual expense of certification. It depends also on the greatly increased running expenses of the dairy. For instance, the matter of putting in steam sterilizing plants and sterilizing every utensil that is used, requiring men to wear clean suits, which have to be provided and laundered. The cost of tuberculin testing and the cost of the animals destroyed when found to be tuberculous are large items. All those items enter into the question over and above what Mr. Miller specified. If a dairyman started to produce an equal grade with certified milk, irrespective of any relation to the commission, his expenses leaving out fees, would be higher than those of the man who produces in the ordinary way.

**Dr. J. W. Van Derslice**, Chicago: In Chicago the milk is produced practically under two contracts. Under one the man furnishes the bottle, label and certification and sends the milk f. o. b. to Chicago for 12 cents. The distributor orders a certain number of bottles each day. The other contract, which brings the cost of certification and the cost of distribution more clearly before you, is, I believe, the best one. There are four or five firms under contract to distributors, who agree to take the entire output of the firm at 8 cents a quart net, the distributor furnishing the labels, paying the cost of certification and buying the bottles. On that 8-cent basis, the farmer—and the farmer I am speaking of knows how to figure costs—says he is getting $2 a hundred for common milk. In other words, he says the difference between the production of certified milk and the production of commercial milk is that, if he sells his milk as a commercial milk, with the lessened cost which that entails, he would sell it on a graduated scale running from $1 to $1.70 per hundred. For the year 1911 the average was $1.67. For the year 1912 it was a little higher. This man says that he is selling his commercial milk for $2 a hundred. In other words, the men who figure the cost for us most closely tell us that there is a leeway of 40 cents per hundred pounds, or 40 cents per 46 quarts, between the production of certified and commercial milk. This philanthropy then is a fine text for a sermon. They do not talk that to me any more. The men who went into this business first have their money tied up in a big plant. They knew nothing about what the possibilities were for them, but the man who goes into the business to-day does so as a money-making proposition, because there is a market for the product. The rich man wants some place to take his fine friends, and the only possible way to make the farm pay is by the sale of certified milk. There is absolutely no question about it. The big farm to-day that is not selling its entire output is losing money. According to the government reports, over 50 per cent. of the farms are losing money to the owner every day.

Another point I wish to bring out is the value of the superintendent. We can show you superintendents who have changed from one farm to another, and the bacteria count follows the superintendent. You must have a man who knows, feels and breathes certified milk. Another point Mr. Francisco spoke of—in one-half or two-thirds of our farms a prize is held up to the employees on the farm—a bonus of $5 a month if the bacteria count during the month is under 5,000. In that way you have every worker on the farm watching his coworker to see that there is no carelessness. Every man wants that $5.

**Dr. Otto P. Geier**, Cincinnati: There is nothing about which there is so much confusion as the cost of certification. I attempted several years ago to make a survey of the methods used by the different commissions of the country and to define in my own mind, at least, the broad problem of the cost of certification. There are just as many methods of arriving at the cost of certification as there are milk commissions in the country. One commission charges a per bottle tax and supplies nothing but the chemical and bacterial work and veterinary inspections. The next one charges a flat rate for each bacteriologic chemical and veterinary examination, and the producer buys his caps. In still another instance the producer pays a per bottle tax and the chemical, bacteriologic and veterinary inspections are made by the commission. The commission also buys the caps and seals out of the per bottle tax income. So you have just as many variations in the matter of arriving at the cost of certification as you have commissions. I have not seen the figures shown here before. At first sight they seem unreasonably high. I should remark, however, in the interest of Cincinnati that the commission does many things for the producer. It supplies the caps and seals, medical inspections, veterinary inspections and chemical and bacteriologic examination, which are done biweekly, and more frequently if there is any trouble at the dairy. The commission is able to maintain a laboratory for this work in connection with the office of the commission. The bacteriologist and chemist and his assistant, as well as the medical profession of the community, are at the call of the dairymen. The commission also does propaganda work, thus advertising the product of the dairymen and in a general way serving the community from a broader point of view. Everything else being equal, it is fairer to use a per bottle tax than a tax which applies only to the various examinations. In a per bottle tax the large producer helps pay the load of the smaller producer.

**Mr. W. E. Miller**, Lebanon, Ohio: The cost of keeping up the herd is based on the assumption that the herd is practically stationary. Individuals go out, but others come in. We have practically no loss from the tuberculin test. As a matter of fact, the herd increased in value during the time under discussion. As to repairs, our aim is to keep the equipment in the original condition. It is practically as valuable now, because of improvements made from time to time, as it was in the beginning.

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# PATHOLOGY OF THE PROSTATE *

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Sixty-eight years ago Samuel D. Gross[1] stated that the prostate gland consists of "two lateral lobes and a small pyramidal tubercle, which is a small portion of the gland in a state of hypertrophy, described as a third lobe by Sir Edward Home."

In Keen's edition of "Gray's Anatomy" published in 1887 I find that the prostate has "two lateral lobes of equal size separated by a notch. A third or middle lobe is a small transverse band, occasionally a rounded or triangular prominence placed between the two lateral lobes.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Gross, Samuel D.: Elements of Pathologic Anatomy, Boston, 1845.

According to Gerrish[2] the prostate consists of two lateral lobes.

In Cunningham's "Anatomy," 1903, we find the following statement:

> The somewhat wedge-shaped portion of the prostate, which lies between the ejaculatory ducts and the posterior aspect of the urethra receives the name of the *middle lobe*. . . . The rest of the prostate is described as being composed of two large lateral portions or *lateral lobes*."

White and Morton, 1907, say that "the prostate is made up of two lateral lobes connected by an isthmus."

Many more authors of comparatively recent date could be quoted, using about the same language in each case, namely, that the prostate is made up of two, or at most three, lobes, with no definite or comprehensive description of their relations. Nothwithstanding the fact that much good research work has been done on this subject by several investigators, it seems to have encountered the same difficulty of most new subject-matter in penetrating the covers of the average text-book. It is kept from their pages because there is no room remaining after the stereotyped matter that has been handed from generation to generation is given its accustomed place of prominence.

Among those who have developed the embryology, histology, anatomy and pathology of the prostate so that now we have a definite knowledge of this subject that can be accepted are Young, Geraghty and Stevens, 1906, von Frisch, 1910, Tandler and Zuckerkandl, 1911, and Lowsley, 1912.

While many others have studied this subject in detail and have published excellent monographs, it seems to me that these four reports which have appeared in the last seven years cover about all that is of value pertaining to these phases of the prostate gland. When some one works out a definite etiology of prostatic hypertrophy the last chapter on the prostate gland will have been written.

In view of the fact that most of the data on this subject are of recent date it seemed advisable to present at this time a summing up in concise form a sort of working knowledge and to further stimulate a more general interest in this important region of the body.

That there may be no confusion as to terminology it seems advisable that a definite understanding be had regarding the various portions of the gland. According to Lowsley these are as follows:

> The middle lobe, or that part of the gland which is situated between the bladder and the ejaculatory ducts under the floor of the urethra (prespermatic and posturethral). Lateral lobes or those parts of the gland which arise from the prostate furrows and the lateral walls of the urethra and extend laterally and posteriorly from that structure. Posterior lobe, or that part of the prostate which lies dorsal to the ejaculatory ducts above their entrance into the urethra and dorsal to the urethra below this point (postspermatic and posturethral). This is the part of the prostate which is felt per rectum. Ventral lobe, or that part of the organ formed by glands arising from the anterior or ventral wall of the prostatic urethra.

## EMBRYOLOGY

Lowsley's investigations of the development of the prostate gland consisted in serial sections of prostates and surrounding tissues obtained from human fetuses varying in age from 10 weeks to full term. He found that the prostate gland begins to develop during the third month of fetal life.

> The tubules which compose it make their appearance as solid epithelial outgrowths from five distinct parts of the prostatic urethra. These solid masses of deeply staining cells very soon become circularly arranged around the lumen, and branches are found very early. The five foci from which groups of prostatic tubules take their origin are located as follows: on the floor of the urethra between the neck of the bladder and the openings of the ejaculatory ducts and utriculus prostaticus, one in each prostatic furrow and on the sides of the urethra, on the floor of the urethra below the openings of the ejaculatory ducts and the utricle, and on the ventral or anterior wall of the prostatic urethra. The tubules originating from these five foci by their further growth and the development of the stroma around them become the middle, right and left lateral, posterior and anterior lobes, respectively. In early fetal life they are widely separated from one another, but in later stages the separation between the middle and two lateral lobes is not very great. There is not an intermingling of tubules in any of the specimens studied, but in many places in the new-born the tubules of the middle lobe are observed side by side with those of the lateral lobes, there being no definite capsule separating them. The separation of the posterior lobe from the others is complete, as there is a rather dense layer of fibrous tissue between it and the lateral lobes. The anterior lobe is widely separated from the two lateral lobes.

There is but little difficulty in demonstrating these five lobes in post-mortem specimens, or in the prostates removed entire, during life.

## HISTOLOGIC ANATOMY

The prostate reaches its full normal development about the twentieth year. The capsule or external portion is not a true capsule in the sense that it can be easily separated from the gland, but it is made up of musculoconnective tissue from which bands extend into the body of the gland surrounding the alveoli of the glandular structure. The various lobes normally have no distinct capsular separation from each other. The gland tissue communicates through numerous duct openings with the posterior urethra. It is through these openings and along the tubules that infection easily finds its way into the prostate gland from the urethra.

The prostate is in close relation with the bladder, it surrounds the urethra, is attached to the pubic arch and is very narrowly separated from the rectum. A dense plexus of veins partially envelops it.

## PATHOLOGY

The most frequent cause of prostatic disturbances is the gonococcus which invades the glandular structure from a posterior urethritis. The prostatitis thus produced may be simple and confined to small areas or it may be quite general involving a large portion of the gland. There may be only an acute inflammatory condition produced or there may be abscess formation. In the latter the abscess or abscesses at times develop very early, as soon as three weeks, following the infection of the posterior urethra. It occasionally happens that about the time the abscess on one side of the prostate has been cared for there develops another on the other side.

Many cases of gonococcic infection of the prostate cause but few symptoms, yet the gonococci are resting quietly to be aroused from their lethargy following a period of dissipation and excesses by the one harboring them. Or possibly he has been contemplating matri-

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2. Gerrish, Frederic H.: In Text-Book of Anatomy, Philadelphia, 1899.

mony and has been on his good behavior, indulging in neither alcohol nor sexual gratification for months; yet shortly after marriage a urethral discharge develops, and too often an innocent wife becomes infected from a well-meaning but still infectious husband.

The prostate must not be held responsible for all such late infections, however, for the seminal vesicles are more frequently infected than was formerly supposed. Owing to the close relation between the prostate and seminal vesicles it is very difficult to state when one is involved and not the other. In many post-mortem specimens examined I have found a perivesiculitis so pronounced that it was no easy matter to determine by touch where the prostate ended and the vesicles began. I am convinced that we have often made the mistake of diagnosing prostatitis when in fact it was seminal vesiculitis. That it is possible for the vesicles to be pathologic with a normal prostate has been proved several times in the post-mortem specimens examined. Most of my material was gathered from the Cincinnati City Hospital, and normal seminal vesicles were rare.

Tuberculosis of the prostate may be primary, but is in most cases secondary to tuberculosis elsewhere in the body, and is usually secondary to tuberculosis elsewhere in the genito-urinary tract. Most frequently tuberculosis of the kidneys or epididymes precede invasion of the prostate. Among the cases that I have been able to examine post mortem there has been found only one of tuberculosis involvement of the prostate in which the seminal vesicles have escaped the same infection. Often it is the seminal vesicle and that side of the prostate corresponding to the epididymis, right or left, that is involved. Since tuberculosis of the prostate is seldom if ever the primary focus of urogenital tuberculosis and is almost always associated with tuberculosis of the seminal vesicle, the futility of surgical treatment can readily be understood. In these cases it is also frequently difficult to locate on rectal examination the upper border of the side of the prostate involved, as it is coalesced with the seminal vesicle by new inflammatory tissue.

Calcareous deposits are not infrequently found in the prostate in late adult life. This may be in the form of small accumulations of calcareous material disseminated through the gland, or a single large calculus, or a pocket containing many hundred small calculi.

## SENILE CHANGES

Many men past 50 years of age have urinary disturbances. The large majority of these are due to pathologic changes in the prostate gland. Nevertheless it must not be taken for granted that because a man is more than 50 and has urinary trouble, that it is necessarily due to the prostate. Recently a man aged 62, who had been treated for hypertrophy of the prostate for some time, was referred to me for operation. His troubles were all due to a very tight stricture in the bulbous portion of the urethra which had developed subsequent to a gonorrheal urethritis contracted more than twenty years previously.

Senile changes from the normal morphology of the prostate are three: (1) adenoma, new growths in the glandular stricture; (2) increase in the relative amount of stroma, fibrosis, and (3) malignancy.

Any one or all three may be present in a single case. In the very large prostates there is an enormous development of adenomatous tissue with practically no increase in amount of the stroma or musculoconnective tissue. This variety can easily be felt per rectum and is not hard.

When the interglandular tissue, the stroma, is unduly increased in amount the obstruction is not so large and feels hard.

Of the five lobes all may undergo these morphologic changes classified as hypertrophy, except that portion below the ejaculatory ducts, the posterior lobe. The most frequent origin of adenomatous growth is in the middle lobe, just beneath and behind the internal urethral opening. The anterior group of glands or lobe is seldom involved in this process, the lateral lobes rather frequently. Tandler and Zuckerkandl in their study of many post-mortem specimens of prostatic hypertrophy always found the middle lobe involved. While I am not in a position to say that enlargement of the lateral lobes are not always attended by morphologic changes of the middle lobe, I do know that many patients have been clinically cured on removal of later enlargements when no middle lobe could be felt. There is an endless variety of shapes and contours of these new growths, and their effect on the posterior urethra and the internal urethral orifice is varied. That portion of the urethra between the collicle (verumontanum) and the bladder is elongated and distorted in many ways, being flattened, twisted and pushed to one side or the other of the middle lobe.

The gland, which normally is entirely extravesicular, becomes both extravesicular and intravesicular, the enlargement pushing up into the bladder around the vesicle orifice. The sphincter vesicae is crowded from its normal position about the internal meatus and is found surrounding the intravesical portion of the new growth. In its normal state this gland can be felt per rectum, but in no way intrudes on the rectal lumen. Many hypertrophies become so large that they act as a decided rectal obstruction.

A few of our specimens show a distribution of adenomatous growths entirely around the urethra, involving the anterior, two lateral and middle lobes. These are the rings or urethral collars that are very troublesome to the patient and are difficult of removal.

The so-called "prostatic bar" is either not prostatic or not a bar. In the first instance it is a fibrous bar which has developed about the internal sphincter as a result of chronic inflammation in the posterior urethra and occurs earlier in life than true prostatic changes. In the second instance if the obstruction is of prostatic origin it is not in the form of a bar, but is an enlargement of the middle lobe, and changes the shape of the internal meatus from a normal funnel appearance to that of an inverted crescent.

As was mentioned earlier in this paper there is no true normal prostatic capsule from which the prostate can be removed. The surgical capsule which surrounds the adenomatous growths is the prostate crowded to the side during the development of the adenomata. This when examined microscopically shows both stroma and gland tissue closely compressed. Squiers has called our attention to the ease with which the line of cleavage or separation between the surgical capsule and the new growth can be found, when we seek for it in the roof or anterior portion of the prostatic urethra. In the large majority of cases there is nothing but mucous membrane covering the new growth at this place. There are some cases in which this is not true, and these are difficult of removal.

Not infrequently a patient with marked prostatic symptoms, whose prostate feels very large, is relieved of his trouble and the gland noticeably reduced in size after a few days' rest in bed, free catharsis and continuous bladder drainage. The symptoms were due to an acute engorgement or stasis in the prostatic venous plexuses, and when the predisposing causes of this were removed the symptoms disappeared. If allowed to go without surgical interference, as he should be, the patient may live comfortably for a long time without further trouble.

I am not yet convinced that a simple prostatic hypertrophy has any tendency to undergo a malignant degeneration; hence cancer is not to be feared as a later development of hypertrophy. If the patient has cancer of the prostate his trouble began as a malignancy and did not become such after he had suffered many years from an adenomatous overgrowth.

The posterior lobe is the locus of origin of practically all of the malignancies of the prostate, which are simple carcinoma, adenocarcinoma or sarcoma, the latter exceedingly rare. It is possible for the same patient to harbor both hypertrophy and cancer, since these two pathologic processes attack different parts of the gland.

Cancer originating in the posterior lobe soon obliterates the natural groove or furrow felt in the prostate per rectum. The disease may be confined to the gland or invade the surrounding structures. In one case of far-advanced carcinoma of the prostate I found, when doing a palliative operation, a degeneration or breaking down of the periphery of the cancer, and a solid mass of cancerous tissue was removed without dissection, decapsulation or cutting, as it was retained in this space much as a foreign body.

## CONCLUSIONS

1. The prostate gland has five distinct glandular areas, which may be termed lobes.

2. Pathologic changes in the seminal vesicles are often overlooked and the prostate alone considered, when in fact both are involved.

3. Tuberculosis of the prostate is seldom found without the same infection of seminal vesicles.

4. Prostatic hypertrophy is usually a simple adenomatous growth which crowds the normal prostate, so as to form a surgical capsule. In the roof or anterior portion of the prostatic urethra these new growths are covered with but little more than mucous membrane.

5. Malignancy of prostate is confined to the posterior lobe.

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## ABSTRACT OF DISCUSSION

Dr. John T. Geraghty, Baltimore: Our ideas regarding the pathology of hypertrophy of the prostate have changed considerably in recent years. At first, it was considered that the adenomatous process involved the whole prostate, but now it is quite generally conceded that the entire gland is not involved in the pathologic process. Albarran and Motz some years ago concluded from their studies that only the central portion or the central group of glands was the seat of hypertrophy. More recently, Tandler and Zuckerkandl brought forward the view that hypertrophy involved only the middle lobe, and this view seems to be accepted almost universally. At present the prostate at birth and in the adult is composed of (1) a posterior lobe which forms the largest part of the prostate, as felt by rectum; (2) the two lateral lobes which are fused beneath the urethra with the embryologic middle-lobe tubules; (3) the anterior lobe which in the adult prostate is usually insignificant and contains only a few scattered glands, and (4) groups of accessory glands, one group lying beneath the mucous membrane at the vesicle orifice inside the sphincter and usually referred to as Albarran's glands. Another group of glands described by Home is occasionally found beneath the mucous membrane of the trigon. This latter group is much more inconstant than the Albarran group. From my studies of prostatic hypertrophy, I am forced to disagree with Tandler and Zuckerkandl that hypertrophy originates only in the middle lobe and that the lateral masses take no part in the process. In an examination of cases of very early hypertrophy, it is possible to demonstrate the presence of the adenomatous nodules in the lateral lobes, when none are present in the portion corresponding to the median lobe. The median and lateral lobes are, as a rule, equally involved in the pathologic process, while the posterior lobe is the only part of the prostate which does not take part in the hypertrophy. As I have previously pointed out, this posterior lobe plays an important rôle in cancer of the prostate. When carcinoma arises in a prostate previously the seat of a benign hypertrophy, it does not result from the degeneration of the benign adenomatous tissue, but begins in the posterior lobe, which is the non-hypertrophied portion. The recognition of this fact is important in both the diagnosis and radical treatment of cancer of the prostate.

Dr. Bransford Lewis, St. Louis: Ten years ago I called attention to the wide variations that occur in these obstructions in connection with hypertrophied prostates and their bearing on the choice between suprapubic and perineal prostatectomy. At that time I argued that there were some cases that demanded suprapubic prostatectomy, others that demanded a perineal operation and others that demanded no operation. It depended on the types that Dr. Smith has so graphically described. Later studies have, I think, confirmed that position, and I still believe that it is the proper one to take in relation to the choice of operation.

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# CHRONIC CYSTITIS IN WOMEN NOT A DISEASE *

### GEORGE GILBERT SMITH, M.D.

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The demonstration to this section of the thesis that persistent cystitis in women is in itself not a disease, but is the result of pathologic conditions outside the bladder, strongly resembles the importation of coal into Newcastle. That this conception of cystitis is not generally held by medical men, however, has been illustrated many times in the women's room in the genito-urinary outpatient department of the Massachusetts General Hospital. A number of cases diagnosed as "cystitis" and accompanied by a too long-deferred request that they be studied have been sent there, not only by outside practitioners, but in some instances by other departments. With practically every one of these patients, the time spent in useless bladder lavage had been wasted, and in some the delay had been even more injurious because of the headway which it had afforded the disease.

Every urologist knows that the normal bladder is extremely resistant to infection. Only when its mechanics or its circulation are disturbed, or when it is continuously flooded by infected urine from the kidneys, does it succumb to bacterial invasion.

Proof of the resistance of the bladder to infection may be found in the rarity with which cystitis follows catheterization or even cystoscopy of the normal bladder. Williams, Murray and Wallace[1] found colon bacilli in the urine of twenty-four women in twenty-six, after

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* From the Genito-Urinary Service of the Massachusetts General Hospital.

* Because of lack of space, this article is abbreviated in The Journal by omission of the case-reports. The complete article appears in the Transactions of the Section and in the author's reprints.

[1] Williams, Murray and Wallace, Liverpool Med.-Chir. Jour., 1912. No. 62, p. 425.

operation, yet none of them had cystitis. Not only is the bladder resistant to new infection, but inflammation of long duration will frequently clear up with surprising rapidity, once the cause of it is removed.

It is not my contention that simple cystitis never occurs. In my series, there is one case of syphilitic cystitis. Acute trigonitis, frequently mistaken for cystitis, may follow infection by the gonococcus. Inflammation may, and usually will, result from the intense congestion caused by the too sudden emptying of an overdistended bladder. The trauma of childbirth reduces the resistance of the bladder to those bacteria which ordinarily would pass through it without effect.

It is my belief that these cases of acute cystitis will be cured by a few days in bed, urinary antiseptics and a few irrigations. When the inflammation persists, in spite of these measures, we must look for some other lesion, either in kidney or ureter, in pelvis or urethra, or in the mechanism by which the bladder should be emptied.

In order to test the soundness of this belief, I have collected the histories of ninety-eight women with cystitis. Some of these were ward cases, some outpatients at the Massachusetts General Hospital. All have been seen there within the past five years. These ninety-eight patients comprise all of the cases of cystitis found in the diagnosis catalogue for that period, whether or not occurring in conjunction with other diagnoses. There are also included a few cases of pyonephrosis in which cystitis was present, and ten cases diagnosed as urinary tuberculosis. The last-mentioned were included because the symptoms for the relief of which the patients came to the hospital were those of bladder irritability. No cases of calculus were considered.

Definite evidence of cystitis was required, thereby excluding several cases of "irritable bladder," the urine of which contained neither pus nor bacteria. The process was either seen to exist at cystoscopy, or else was indicated by the symptoms of frequent and burning urination, accompanied by pus or bacteria in the urine. Cases not showing one or the other of these requirements were rejected.

In classifying the cases according to their probable diagnosis, considerable care was observed. In many of the records the evidence was conclusive, as for example, finding the colon bacillus and pus in the urine from ureter catheterization. In others, it was only presumptive, as in a case in which a large, tender kidney, temperature of 102 and colon bacillus from the bladder urine pointed so strongly to pyelitis that there could be no reasonable doubt of the existence of that disorder. In five cases the facts were too inconclusive to admit of any definite diagnosis, and in eleven cases there were too few facts for the record to be of any value whatever.

In eight of the ninety-eight cases there was unilateral pyonephrosis. Two more patients were proved at operation to have focal necrosis. One, at necropsy, showed suppurative nephritis.

In thirty cases the diagnosis was pyelitis or pyelonephritis. In the absence of very careful study, it is impossible to differentiate between these conditions, so that I have grouped these cases together. In sixteen the diagnosis was definitely established by obtaining pus or bacteria, or both, in specimens from the ureter. In one, both ureters were dilated and both kidneys tender; in another, necropsy showed a pyelonephritis. In twelve the diagnosis was based on circumstantial evidence, such as renal pain, fever and a marked albuminuria, accompanied by painful, frequent urination, and pus and bacteria in the urine.

There were five cases of pyelitis in which the evidence pointed more or less directly to an obstruction at the ureteropelvic junction. In one the pelvic capacity was 45 c.c.; in another, 60 c.c.

One case thought to be pyonephrosis proved at operation to be an infected hypernephroma.

Considering this group of forty-one cases of renal infection as a whole, it is an interesting fact that in twenty-nine a bacillus, probably colon, alone was recovered, in two, the colon bacillus plus a diplococcus in one case, a streptococcus in the other. In one case, diplococci and streptococci were found; in another a "mixed growth." In two cases some pus was obtained, but it yielded negative cultures and negative guinea-pigs. In five, no mention of the bacteriology was made. These figures suffice to show the overwhelming predominancy of the colon bacillus in renal infection.

The route by which the kidney is infected has been the subject of much discussion. Two of the pyelitis patients had colon bacilli in the blood as well as in the urine, a phenomenon which may as well have been the result as the cause of their infection.

In five cases there is at least superficial evidence that the trouble began in the bladder and ascended to the kidneys, but here again one may argue that the cystitis was the effect rather than the cause. The fact that renal infection may occur without cystitis, but that cystitis (excluding that due to cystocele, stricture, etc.), never occurs without a renal infection, is in my opinion the most telling bit of evidence against the ascending route.

There were seventeen cases of urinary tuberculosis. In five of these the tubercle bacillus was present in ureteral specimens. In nine more tuberculous kidneys were removed. Another one, with sterile pus in the urine, exhibited a pathologic ureteral orifice. In another patient, whose bladder urine infected a guinea-pig, the right ureteral orifice was of the retracted, golf-hole type. In the third, in which the guinea-pig died too soon for diagnosis, the bladder-pus was sterile and the left ureter pathologic. Every case of tuberculosis showed evidence of renal involvement.

Two patients had cystoceles. One had a pyelitis (colon) as well. The other was cured by perineorrhaphy and a few irrigations.

Three strictures of the urethra were found. Two of these had sterile urine containing no macroscopic pus; one of them, on cystoscopy later, showed a few trigonal ulcerations. Both, however, had marked frequency and pain on urination.

There was one case of ureteral stricture, with a pyelonephritic kidney behind it and great vesical distress, and there was one tabetic bladder. The more acute stage of syphilis was represented by an ulcerative cystitis which cleared up, after obstinately resisting other forms of treatment, on mercury and potassium iodid.

Three cases of cystitis were apparently due to pelvic inflammation. In one, the bladder was adherent to the appendix; in a second, to the uterus; in a third, there was a coexistent acute salpingitis.

In five cases the diagnosis was not made with certainty. The patient in Case 84 gave good evidence of having a stricture of the ureter. In Case 85 there had been cystitis ever since a nephrectomy (cause unknown) eight years before. In Case 86 a subsiding cystitis was shown with slight evidence of a previous pyelitis. The patient in Case 87 had severe renal colic, associated with hematuria. Case 88 was apparently due to mobility of the right kidney, in which a low-grade infection had set in. This patient had a little pus in the urine, from which no bacteria could be grown. She wore a kidney belt, put on 20 pounds in weight, and all the symptoms disappeared.

Eleven cases were so insufficiently studied that no conclusion could be reached.

We have remaining, therefore, eight cases of the ninety-eight in which a simple cystitis was found. The patient in Case 76 was apparently cured by rest in bed for eight days, with hexamethylenamin (*urotropin*) by mouth and a daily silver nitrate lavage. Case 77 showed a red trigon with a few ulcerations. There was no bacilluria and a *negative guinea-pig* inoculation. This patient had a postural defect, with exaggerated knee-jerks, and it is possible that some trophic disturbance might have been the cause of her cystitis. Case 78 was insufficiently studied, inasmuch as the ureters were not catheterized, the cystoscopist relying on the appearance of the ureteral jets. Case 79 was coexistent with a gonococcus urethritis. Cases 81 and 82 were due to continued use of the catheter required by the general condition. Cases 80 and 83 were part of typhoid and paratyphoid infections.

Summary of the eighty-seven cases with *diagnoses shows that cystitis was associated with:*

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|---|---|
| Renal infections, not tuberculous, in | 61 per cent. |
| Renal tuberculosis .. .............. | 19 per cent. |
| Difficulty in emptying bladder...... | 7 per cent. |
| Systemic and pelvic infections...... | 7 per cent. |
| Other causes ...................... | 6 per cent. |

We see, therefore, that in ninety-eight cases there is not one well-studied case of simple cystitis. Every case which was really studied showed a certain or presumptive underlying cause. It cannot be that simple chronic cystitis which is worthy of the name exists with any frequency, or it would, I am sure, have appeared within these records.

The outpatient department attracts often the most trifling ailments; it is hardly possible that it should not have drawn in *a few cases, at least, of simple chronic cystitis, did that* disease exist.

The answer is obvious: it does not exist. It is the duty of the urologist to drive that fact home, and to impress on medical men and the public the necessity of thorough study in every case of persistent inflammation of the bladder.

309 Marlboro Street.

## ABSTRACT OF DISCUSSION

Dr. Bransford Lewis, St. Louis: In the treatment of cystitis we ought to repress as much as possible the idea that cystitis is an original disease and say that there is no treatment for cystitis, except as it is based on a definite recognition of the cause. The more we can affirm that idea the better for progress in urology. I have for a long time followed the policy that, even though I thought the location of an *infection* in the *urinary tract* was in the vesicles or the prostate or the posterior urethra, if I did not make progress, I would do cystoscopy and ureteral catheterization; I have often surprised myself by finding the presence of an infection *in one* or both kidney pelves. It is *often more important* to establish the origin of the infection than just the kind of infecting microbe that is present.

Another point relates to the amount of reliance to be placed in ureteroscopy through the cystoscope. *I do not have much* confidence in *my* own ability in that direction, or in that of others. I had a peculiar case lately *in a girl, 17 years old,* whose right kidney was full of stones, *necessitating* the removal of the kidney, *and on* the other side a certain degree of infected *pyonephrosis without* the presence of stone. I *have* been washing out that kidney pelvis. The question comes *up whether it* would be necessary to *do a nephrotomy* for a more positive drainage, or maybe change the position of the kidney, as suggested by Dr. Fowler.

Dr. O. S. Fowler, Denver: Dr. Smith has not taken into consideration one class of cases in which we see cystitis; that is, cases of cystitis following either pelvic or abdominal operations, especially cases in which catheterization has been resorted to afterward. I have seen a number of these cases, *and they cause* a great deal of trouble. Some of these patients, however, *while not* having been catheterized, do recover after the washing out of the bladder. In those cases it would seem as if the infection did not extend upward, for in a great number of them we do get kidney symptoms. I have had the opportunity of working out some of these cases and have proved that an infection came from the kidney. I should like to ask Dr. Smith what his experience has been in reference to the postoperative catheterization of women.

Dr. W. T. Elam, St. Joseph, Mo.: Unless there is some definite bladder pathology the word "cystitis" is not applicable. In certain nervous conditions there may be urinary symptoms that resemble to some extent a cystitis. The condition is not a cystitis, however; it is merely a neurosis; and it exists not only in women, but also in men.

Dr. Fowler referred to catheter cystitis. We all know that a congestion may exist as a result of catheterization, which may give a *little* irritation and may perhaps result in burning and frequent urination. That is not a cystitis unless there is an infection and a pathologic condition which means inflammatory exudates, serous and cellular. A chronic cystitis, in my judgment, is some chronic change in the bladder walls or mucosa. The doctor's statistics are, beyond all question, of value. If they could have been supported by microscopic examinations of the bladder tissue, thus determining absolutely that there was no disease in the bladder, then we could quickly make the attempt to rule out chronic cystitis. After childbirth and after operation, whether catheterization has been done or not, we have urinary symptoms that often appear to be relieved not only by lavage, but simply by introducing a permanent catheter and draining the bladder; yet we all are willing to admit that bladder irritation may come as a result of pyelonephritis or of pyelitis or an involvement of the upper urinary tract. There are a great many cases apparently of neurosis of the bladder, especially in women.

Dr. M. Krotoszyner, *San Francisco:* I wish to emphasize the importance of expectant treatment, which is apt to yield excellent results in a good *many* cases of cystitis or infection of the bladder. Being well trained in the use of modern instruments, urologists, as a rule, resort too quickly *to* instrumentation, by means of which the patient's untoward symptoms are often intensified. Instrumentation for diagnostic purposes is strictly indicated, however, in all forms of bladder irritability that are not benefited by judicious *local* treatment. In young women particularly the *initial symptoms* of renal tuberculosis may be marked by frequent and painful micturition, and an early diagnosis in these *cases is feasible* only on the basis of careful and repeated cystoscopic examinations.

Dr. J. R. Caulk, St. Louis: I agree *with Dr. Smith* that the great majority of bladder infections are *secondary to* some other influence. I do not believe *strongly* in the neurotic element, the nervous bladders in young women *particularly.* I have seen *any number* of cases in *which patients* have been doomed to a life of neurasthenia as a *result of* this belief, and I think that this section ought *to correct* this impression.

I do *not think* that nerve lesions exist *and cause* distress, but I believe that all these neurotic bladders *have* something back of them. In the great majority of cases sent *to me* with that particular diagnosis I have found *some* lesion in the pelvis—fibroids in the *anterior* wall of the uterus, *or* some lesion in the appendages—and I do not believe *that we* ought to say that a person is suffering from a nervous bladder until we have utilized every means at our disposal to rule out every lesion in the pelvis and upper urinary tract.

**Dr. Thomas M. Paul**, St. Joseph, Mo.: In regard to the manner in which the *Bacillus coli* reaches the kidney or bladder: There is a source of infection which I believe is usually overlooked. In the act of defecating in the modern toilet, as the fecal mass drops into the water there will be a return splash. The first splash may be composed entirely of clear water, but the subsequent splashes, resulting from the continued dropping of fecal masses, will contain many bacteria. While the mucous surface exposed in the male is small, and infection cannot readily take place, in the female it is much larger and contamination of the vulva is sure to occur. If this be true, it is easy to understand how an infection of this kind can ascend through the urethra and cause a cystitis.

**Dr. A. L. Chute**, Boston: The last point is well taken, because these persons are all made better by treatment of the bladder, although the source of the infection is above. The bladder is, of course, improved under lavage; therefore these treatments are given forever. In these cases I think that there is not only an infection of the kidney pelvis, but also a kidney pelvis that does not drain itself. My own belief is that disease of the kidney pelvis in the ordinary person, barring tuberculosis, is cured if there is drainage.

**Dr. G. G. Smith**, Boston: I hoped that this paper would elicit more discussion. I wanted to find out if any of you really have had cases of persistent cystitis in which careful examination showed no source of infection in the kidney or in the mechanism of emptying the bladder, and I must say that although several men have suggested to-day that they have seen such cases of chronic cystitis, no one has mentioned any case which has been thoroughly studied and in which the infection was shown to be residual in the bladder alone.

The criticism was made that in this paper I have considered a number of cases in which true cystitis did not exist. That is not so, because I said, "One of two pieces of evidence was required; either the bladder was seen to be inflamed at cystoscopy, or pus and bacteria were found in the urine."

I have not seen much of the cystitis which follows operation on women. It seems to me that what usually happens is that the woman is allowed to go without urinating until her bladder becomes much distended and then she is catheterized. As we know, catheterization always induces hyperemia, and, as has been shown by the men I quoted, the colon bacillus is present in the urine in twenty-four out of twenty-six women after operation. The bladder is congested by being suddenly emptied, and it becomes infected. Thus you do have a cystitis in these cases, but it clears up under a comparatively simple line of treatment. If it does not do so the infection is found to be seated in the kidney.

I am glad that Dr. Chute brought up the point that bladder lavage will help in these cases of renal infection, because that is true. I have in mind now a patient who was benefited by lavage as long as she kept it up. I grew colon bacilli from both kidneys, and found pus in the urine from both kidneys. Yet she came for bladder lavage because it made her feel better. Infection by the use of toilets does not seem probable for this reason: If cystitis occurred from that we should more often see a pure cystitis without kidney involvement. It seems to me that a strong point in favor of the descending route is the fact that, whereas you may find a pyelitis without a cystitis, you rarely, if ever, find a cystitis without a pyelitis.

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Recruits for the Army.—Great difficulty is experienced by the War Department in securing a sufficient number of suitable recruits to fill existing vacancies, on account of the mental and physical degeneracy of the young men who present themselves for examination. During the year of 1912 only 35,837 recruits were accepted from 159,673 applicants examined, a rejection of 76 per cent.—L. M. Mervin Maus, in *Chicago Med. Recorder.*

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# THE PREPARATION OF PRIVATE HOUSES FOR OPERATIONS

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It is perfectly feasible to arrange private houses for operations so that the lack of hospital facilities need not be felt. An abdominal operation is, of course, more easily done and the patient more easily cared for in a hospital than at the patient's home, but even this type of operation can be adequately cared for at home, provided the preparation is sufficiently well made. Ordinary operations, especially plastics for the repair of the injuries of childbirth, are satisfactorily done in the patient's home. A trained nurse, or one at least accustomed to the care of surgical cases and with a working knowledge of asepsis, is most desirable, but not indispensable, provided the physician is willing to give minute instructions as to the care required and to attend to such details as catheterization himself.

*The Choice of a Room.*—If possible, the room should be one adjoining the patient's bedroom, and preferably not the patient's own room. The patient is thus spared the sight of the necessary preparation. The paramount question is one of light, and the operating-table should be so placed as to get the maximum amount, hence, near the window. The window can be screened against outside observation by covering it with a single piece of gauze or by pinning together the curtains, provided they are of a material which will transmit the light without too much diminution, or even by soaping or whitewashing the pane of glass. Except for an abdominal operation it is not necessary to strip the room or take up the carpets or rugs. The floor can be protected by newspapers, thickly laid, and over these a sheet, wrung out of a 1:1,000 bichlorid solution, should be spread and should be damp when the operation is begun. Any unnecessary hangings ought to be removed and the furniture moved to a part of the room where it will be out of the way and covered with sheets. The walls in the immediate vicinity of the operating-table should be protected by sheets held up by the glass-headed pins known as Moore's push-pins, and not by tacks. The pins leave no scars, as tacks do, especially in wall-paper and plaster.

*The Operating-Table.*—This should preferably be one of the models of portable, collapsible operating-tables, but this is by no means a necessity. A kitchen table with sufficient strength of legs answers every purpose. If this is used, the top must be thoroughly scrubbed and then thickly padded, as the thinly padded table is a prolific cause of backache after operations. In many operations, notably perineal operations, a Kelly pad is a most desirable addition; but one that will answer every purpose can be improvised by rolling up rubber sheeting at the sides and back, or even newspapers covered by towels or sheets. The special tables are provided with stirrups and leg-holders for the lithotomy position, when this position is desired. The kitchen table can be equally well equipped with either the Edebohls portable leg-support, which clamp on the edge of the table, or, much better, by a rolled sheet tied about one knee, passed back over one shoulder and out under the other (so that pressure does not come altogether on the patient's neck) and fastened above the other knee. The knots should be on the outside of the leg. This makes the best leg-holder I know. If the Edebohls supports are used, it will be found necessary to tighten the screws with a wrench (no one's fingers are strong enough), for, if the patient should strain, the leverage is enormous. If a chair or stool is needed, a piano-stool draped with a sheet is most satisfactory, but a plain chair (not too low) will answer. The end of the Kelly pad, or its substitute, should drain into a bucket or slop-jar which has been well scalded out.

The special operating-tables have apparatus for the Trendelenburg position; the kitchen table can be equally well equipped by raising the two legs on blocks or bricks, or even, if the extreme position is desired, on the seats of two chairs. The whole table is best draped in a sheet, although this is not essential.

*Instrument- and Dressing-Tables.*—Two of these are required, one on either side of the operating-table. As these tables often have polished tops, adequate protection must be provided. This is best done by covering the top thickly with newspapers, placing on these a large tin tray and covering all with a sheet, draped so that it will touch the floor on all sides. This is to protect the legs and sides.

*Douche-Bag.*—This is needed in all perineal operations, and a more efficient means of splashing the wall-paper than an improperly hung douche-bag can hardly be devised. A suitable hook is provided, preferably in the window-frame. An open towel is placed over this hook so that the center of the towel is over the hook. The bag is hung on the hook and the towel allowed to drape down over it. This has proved an adequate protection. The douche-bag and tube are, of course, prepared by boiling.

*Instruments.*—It is best to boil these where the physician and nurse can keep an eye on them. A large alcohol lamp and a copper tray sterilizer or basin will be satisfactory. If an alcohol lamp is placed in the bathtub, and the instruments are sterilized there, it will guard against the danger of upsetting them and possibly a conflagration. If the instruments are sterilized over the kitchen stove, servants must be warned not to touch them. I have seen a servant dig the various instruments out of the sterilizer with a stove-lid lifter and speculate on their uses.

*Dressings.*—For all ordinary operations the commercially sterilized gauze and cotton are entirely satisfactory. For abdominal operations the dressings should preferably be steam sterilized either in an autoclave or even in a Rochester steam sterilizer. If the latter is used, the final sterilization should be completed just before the operation. It is not possible adequately to dry dressings so sterilized, and it is better to have them warm and wet than cold and clammy. Sheets and towels can be adequately prepared by freshly laundering them and then ironing with an iron hot enough to come just short of scorching them. The time-honored custom of baking in the oven of the kitchen range is useless. Such dressings are not sterile unless so scorched as to be unfit for use. For gauze sponges, I have always found the commercially sterilized gauze safe. If sea sponges are used, they must be soaked over night in a 1:500 bichlorid or a 1:20 phenol (carbolic acid) solution. Boiling them destroys their absorptive qualities.

*Basins.*—Unless the physician carries his own nest of basins, he must depend on the household supply. Three at least are needed and they must be boiled. Rinsing or wiping them out with an antiseptic solution is not sufficient.

*Scrubbing.*—The best arrangement for scrubbing up and sterilizing the hands can be made in the bath-room. Running water and previously boiled nail-brushes are used, and to obviate stooping over, the dishes of soap, alcohol, etc., can be arranged on a bread-board placed over one end of the tub and resting on the sides of the tub.

*Rubber Gloves.*—Steam sterilized and, hence, dry gloves are best, but this is not always practicable. Boiling is a method always available and is satisfactory. The gloves must be boiled wrapped in gauze or a towel, and should always be boiled flat so that the water can enter them. The custom of boiling gloves rolled up in a ball is a pernicious one, as the inside of these gloves is never sterile and most of the outside is open to grave suspicion.

*Sterile Water.*—The night before operation a clothes-boiler is filled with water. In it are placed three pitchers and a dipper with a hooked handle. These are boiled for half an hour. The pitchers are hooked out of the water with the handle of the dipper and filled, and then towels are tied over their tops and they are set aside to cool over night. The next morning the clothes-boiler full of water and the dipper are boiled again. Thus by mixing the cold water that has stood over night with the hot water boiled just before the operation a supply ample for most operations is secured.

In emergencies, the bottled water sold at all drug-stores is adequate for the cold sterile water, except in abdominal operations. The water in the pitchers can be cooled in a reasonably short time by pouring cold water over the outside of the pitchers.

*Supplies Required.*—The supplies needed for an ordinary operation are as follows: six sheets; twelve towels; 8 ounces of 95 per cent. alcohol; 8 ounces tincture of green soap; 1 pound of absorbent cotton (two half-pound rolls); one 5-yard roll of sterile gauze; one 1-yard jar of iodoform gauze; one bottle of mercuric chlorid tablets; one 2-ounce bottle of pure glycerol (glycerin, as a lubricant for putting on wet gloves); two ½-pound cans of ether, unopened; three small coarse (not silk) sponges, size of orange; one 1-yard package of sterile gauze (for the etherizer, to avoid opening the larger package).

I have this list printed on cards, and one is sent to the patient's house to guard against details being forgotten.

*Nurse's Kit.*—I find it useful to provide the nurse who does all the preparing of houses for me with a bag equipped with what we have found needful. This bag is small and easily carried, but contains nine basins, twelve brushes, twelve pairs of rubber gloves; all the catgut used in the operation (from eight to ten boxes being carried); a Kelly pad; douche-bag; razor for shaving patients (especially in perineal operations); gown and uniform; the glass pins (3 dozen) used for protective sheets, and a roll of safety-pins.

It is perhaps unnecessary to point out that all visible disturbances caused by these preparations should be cleared away, and all soiled linen and sponges and water disposed of as soon as possible. This is particularly desirable when everything has been prepared in the patient's room. No signs should be left for the patient to see on recovery from the anesthetic.

1823 Pine Street.

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Conceit.—Diagnosis: "It was pretty devised of Aesop: the fly sat upon the axle-tree of the chariot wheel, and said, 'What a dust do I raise!' So are there some vain persons that whatsoever goeth alone, or moveth upon greater means, if they have never so little hand in it, they think it is they who carry it."—*Bacon.* Remedy: "Nothing can be better adapted to turn man's thoughts off his own self-sufficiency than the works of Nature."—Maund, *Pub. Health Jour.*

# A CASE OF SYSTEMIC BLASTOMYCOSIS

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*History.*—Dr. B. H. A., aged 37, Brownwood, Tex., was admitted to the Post-Graduate Hospital, Feb. 28, 1913. Family history and personal history have no important bearing in the report, but points in past history may be mentioned. The patient suffered from "malaria" for several months when a young child, but did not remember any other illness. At the age of 18 he suffered from what was probably acute appendicitis, but was not operated on. For the past eight or ten years the patient has usually had a severe cold every winter, coughing for about a fortnight and then recovering. During the winter of 1911-1912 he coughed nearly all winter. The sputum was mucopurulent and scanty never bloody or with odor.

*Present Illness.*—This dated from November, 1912. The patient went from Texas to Chicago and engaged in postgraduate medical work, including necropsies and dissections. Soon after arrival in Chicago, he had a "cold" with coryza, severe cough and scanty mucopurulent sputum. The cough continued up to the time of death and was most marked at night. The sputum was tenacious, mucopurulent, odorless and never bloody until a few days before his death. Shortly after the onset of this cough the patient began to complain of pain in various joints, involving one at a time; first the right knee, then the left shoulder, then the right shoulder, lasting altogether about two months; none of the joints became red or swollen. The patient continued his medical studies. During this period he had a slight fever most of the time, rectal temperature ranging from 100 to 101 F. in the evening. While in Chicago the patient developed a pustule on the left index-finger which did not heal, and there remained a small indurated area covered with a scale or crust which spread from time to time and discharged a trifle occasionally. This area had never been painful or swollen.

Jan. 1, 1913, the patient sailed for Liverpool. During the journey he suffered from pain in the right chest on deep breathing, not very severe or sharply localized. January 8, he was suddenly seized with severe stabbing pain in the right lower chest posteriorly. Deep breathing accentuated this pain. The patient had irregular rigors and high temperature. He entered a London hospital, where a roentgenogram was taken of the chest and abdomen. In consultation with authorities in London it was decided that he was suffering from a liver abscess.

*First Operation and Results.*—January 15 an operation was performed. Incision was made over the ninth rib posteriorly. No pus was found with the aspirating needle in the liver or pleural cavity. The ninth rib was found to be necrotic for several inches near the point at which examination was made, and the necrotic portion was removed. The sinus has never healed, but has continued to discharge a thin yellowish or brownish fluid in small quantities (there had never been jaundice).

Following the operation, the patient had intermittent fever varying from 99 F. in the morning to 105 F. in the afternoon, with profuse sweating. This type of fever continued. The patient developed the morphin habit on account of severe pain in the right chest. Blood-count made in London was said to be negative. Several small abscesses appeared on the chest and lower extremities, cultures from which are reported to have been negative.

February 22 the patient sailed for New York, arriving on February 28, when he came immediately under my care. During the voyage he developed severe pain along the course of the right sciatic nerve and also a lumbago. This feature caused great distress at the time of his admission to the hospital. Dr. McPhee, who examined the patient at my request, reported finding irritation of the right sciatic nerve, the cause for which he could not determine. Dr. Lattin found, on lung examination, numerous coarse and fine moist râles over the left base posteriorly from the fifth rib down. About the angle of the left scapula there was bronchovesicular breathing. Percussion note was slightly impaired over this region. Breathing sounds were obscured by râles. Over the base of the right lung, below the angle of the scapula, were scattered subcrepitant râles. Under my direction systematic examination was made of the blood and of the excreta. There was no leukocytosis. Two blood-cultures gave negative results. Urine examination was negative. Sputum examination was negative for tubercle bacilli. Von Pirquet test was negative. Wassermann test was negative.

March 22 the patient complained of sudden sharp pain in the right lower chest, especially on deep breathing. This gradually subsided in a few hours. Examination at this time showed a few subcrepitant râles in the right lower axillary region. Breathing sounds were clear. The edge of the right lobe of the liver extended a little below the costal margin, but was not tender. There was marked tenderness on pressure, however, over a large part of the right lobe of the liver. The spleen was not palpable. The patient was fairly well nourished and partook of nourishment sparingly. He was irritable but fully rational during the days shortly after his admission to the hospital, but irrational, at times, later. The tongue and lips were moist and of natural color. The skin seemed ashy, and this ashiness increased as the illness progressed. There was progressive weakness and emaciation, which did not, however, become extreme. Several physicians and surgeons who were asked to see the patient in consultation did not arrive at a satisfactory diagnosis. Roentgenoscopy showed a tendency to consolidation at the bases of both lungs and a moderate degree of enlargement of the liver, marked more by arching of the diaphragm than by extension of the sharp edge of the liver below the costal border. It was my feeling that we were dealing with subphrenic abscess or with abscess of the cephalad portion of the right lobe of the liver, and that the lung consolidation represented an infection by way of lymph-vessels of the diaphragm; although some of the consultants believed the case to be one of bronchopneumonia with lung abscess, based on the physical signs and the roentgenogram, which showed that from the hilum of the lung on the right side, extending outward in the parenchyma, there was an area of diffuse inflammatory invasion.

*Later Operations and Course.*—On the basis of my feeling that we were dealing with subphrenic abscess or hepatic abscess, the patient was anesthetized, March 26, and an aspirating needle passed in several directions in a search for pus, including the subdiaphragmatic region and also penetrating the diaphragm to the pleural cavity; but no pus was found. The patient suffered very little from the operation.

April 12, after further consultation, it was decided to make a small incision at the lower right costal margin for the purpose of searching for an abscess which might appear on palpation of the liver. No abscess was found on palpation, and a long steel sound passed freely over the dorsum of the liver discovered no area of adhesions, excepting at the site of the London rib excision. There were extensive adhesions, however, about the gall-bladder and the lower margin of the liver to adjacent viscera. These adhesions were separated by sweeping the finger about, and the gall-bladder was felt to be distended. It was not thought best to enlarge this incision for the purpose of draining the gall-bladder at that time, as it seemed desirable to be satisfied with the results of quick exploration.

The patient suffered little from this operation and on April 19 another small incision was made and the gall-bladder drained, in the belief—based on the extensive adhesions in the vicinity—that we might have a collection of pus in the gall-bladder. The gall-bladder, however, contained nothing but a large amount of mucus colored with bile. This operation, like the others, disturbed the patient little, as it was quickly done, but it yielded no result. The patient continued to fail gradually, notwithstanding the application of various general resources for maintaining his strength. Superficial abscesses occasionally appeared on the chest and legs. These abscesses would develop quickly, without redness or induration, and with barely enough pain to attract the attention of the patient, and when evacuated were found to contain a thin yellowish or brownish pus. There was one abscess on the forehead, at the margin of the hair.

May 4 one of the staff men, Dr. Hjelm, obtained a culture of blastomyces from a small abscess of the neck, and a pure culture having been obtained later, the case was definitely determined to be one of systemic blastomycosis. The sputum had been carefully examined, but on account of the number of cocci and bacilli (with the staphylococci predominating) it had been difficult to obtain a culture separating the blastomyces.

The diagnosis of systemic blastomycosis having been established, attention was given to the small scaly area of the left index-finger, which had been considered of little consequence. Dr. Pollitzer, who examined it, decided that it was a small area of blastomycosis of the skin. The patient, on being questioned, stated that he had pricked himself at this point while dissecting in Chicago in November, 1912.

After the diagnosis was established, potassium iodid was given, but this was not borne well and was dropped, my belief being that it is efficient only when we have the skin lesions of blastomycosis, because of the selective action of the glands of the skin in excreting potassium iodid. An examination of statistics seemed to show that it had not been of value in case of systemic blastomycosis.

An intravenous injection of neosalvarsan was given twice, but to this the patient made no response of consequence. A culture of the blastomyces was being developed for the purpose of preparing a vaccine, but before we could employ this the patient died, May 11, from general exhaustion, the last record of vital signs showing a temperature of 102 degrees F., pulse 166, respiration 10.

The patient at that time had been hiccoughing at frequent intervals and tried at many times to vomit, bringing up small quantities of greenish mucus.

Post-mortem examination was not permitted.

*Characteristic Blood Examination.*—March 2: Leukocytes 10,500, polynuclears 79 per cent., and lymphocytes 21 per cent. The hemoglobin, which was 90 per cent. at the time of the patient's entrance to the hospital, had dropped down to 70 per cent. on April 11. Blood examinations were at all times negative.

*Sputum Examination.*—Various cocci and bacilli were found, staphylococci predominating.

*Characteristic Urine Examination.*—March: reaction, acid; color, amber; specific gravity, 1.015; albumin, none; sugar, none; calcium oxalate crystals. Characteristic urine examination in April: reaction, acid; color, orange; specific gravity, 1.020; albumin, negative; sugar, negative; amorphous urates.

*Characteristic Rectal Temperature.*—From the time of his entrance, February 28, until April 15: Morning temperature varied from normal to 101; evening temperature, from 104 to 105. There was occasional subnormal temperature to 97. After April 15 there was much less variation between morning temperatures, probably because of decreased strength of the patient, and the characteristic temperatures ranged between normal and 102 until May 3, after which the temperature remained not far from normal, with a tendency to become subnormal, from 97 to 98, until the time of his death.

*Characteristic Pulse-Rate.*—This followed the temperature in an ordinary way until April 15, ranging between 100 and 138; the respiration rate ranged from 24 to 28 during this time. After April 15 there was little change in the respiration-rate; pulse-rate varied from 100 to 128. After May 3, respiration-rate ranged from 18 to 26 and the pulse-rate from 100 to 152.

For ten hours preceding death the temperature steadily rose to 102, pulse-rate ranged from 148 to 166 and respiration remained at 10.

It is probable that systemic blastomycosis is not a particularly rare disease, but the diagnosis is not often made. The number of cases reported from Chicago means presumably that Chicago physicians make the diagnosis more readily than it is made elsewhere.

616 Madison Avenue.

# NOTE ON A MOLD, COCCIDIOIDES IMMITIS, FOUND IN A CASE OF GENERALIZED INFECTION IN MAN

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A sample of pus, obtained by incision of a subcutaneous abscess in the case reported by Dr. Morris in this issue of The Journal, was sent to the laboratory for examination on April 23, 1913, Laboratory No. 8511. Microscopic examination of stained preparations of the pus was negative. Plate cultures on ascitic-fluid agar brought to development, after incubation for forty-eight hours, numerous colonies of radiating mycelial threads and a very few bacterial colonies. The appearance of the colonies suggested the possibility of oidiomycosis.

The patient was seen by us on April 25 at the invitation of, and in consultation with, Dr. B. Lattin. The clinical condition of the patient, as well as the history of the illness, was found to be quite in accord with the indication of the laboratory examination. At this time a second specimen of pus was obtained from a closed subcutaneous abscess by aspiration into a clean sterile syringe.

*Microscopic examination* of this pus suspended in salt solution revealed numerous doubly contoured colorless spheres, varying in diameter from 4 to 25 microns. The larger ones were distinctly granular and filled with rather faintly visible globular bodies varying from 1 micron to 5 microns in diameter. Some of the larger spheres were found ruptured with the small spheres evidently ready to escape from their interior. No budding forms or mycelial threads were recognized in the pus.

On the plate cultures of this second specimen of pus many colonies of mold developed, apparently in pure culture. Each colony consisted of a mass of radiating, interlacing, branched and septate threads, surrounding the remains of a spherical body at the center, from which the colony evidently originated.

The organism is regarded as identical with that discovered by Posada and Wernicke,[1] and first described in the United States by Rixford[2] in two cases, and subsequently studied by Rixford and Gilchrist,[3] who bestowed on it the name *Coccidioides immitis.* The work of Ophüls and Moffit[4] and of Wolbach[5] has established the classification of the parasite as a mold. The specific name *Coccidioides immitis* (Rixford and Gilchrist, 1895), should nevertheless be retained, unless a more complete knowledge of the organism shall finally determine its position in some prior genus of the fungi.

Twentieth Street and Second Avenue.

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1. Wernicke, Robert: Ueber einen Protozoenbefund bei Mycosis fungoides (?), Centralbl. f. Bakteriol., 1892, xii, 859.
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# SOME INTRA-ABDOMINAL COMPLICATIONS FOLLOWING LAPAROTOMIES *

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Some of the questions that a patient who is suffering from abdominal disease considers before an operation is consented to are:

1. Has a proper diagnosis been made in his individual case?
2. Will the operation cure him of his trouble?
3. Will it leave him in a worse condition?
4. Will it leave a different train of symptoms with an equal amount of suffering?
5. Is the disease of such importance that he is warranted in taking the risk of an operation?

For a number of years I have been investigating the cause of postoperative intra-abdominal disturbances in my own as well as other surgeons' cases that have come to my attention, and have tried to determine the underlying factors in the production of the various symptoms that patients complain of after laparotomy.

Intra-abdominal pain is usually due to some interference with the function of the alimentary canal, and this may be because of acute or chronic inflammation of the peritoneum, which inhibits peristaltic action of the bowel, or to obstruction of a more chronic nature due to bands, kinks and flexures of the various portions of the digestive tract, producing stasis, resulting in retained food, mucus and gas.

When it is possible for the contents of the stomach to pass readily from the stomach through the pylorus, duodenum, small intestines and colon in the required amount of time for digestion, assimilation and elimination of waste products, the patient experiences no particular discomfort; but, if this period is prolonged, decomposition of semidigested food, distention from retained waste products, gas and mucus often result. The patient suffers from local pain, general disturbances and systemic intoxication.

## THOROUGHNESS OF THE OPERATION

Associated lesions other than the one especially for which an operation is performed may be equally responsible for the patient's suffering. When a laparotomy is performed it is incumbent on the operator to investigate all abdominal and pelvic organs within his reach to determine if this is the case or not. According to Bottomley, "An attempt should be made to find adequate pathologic cause for the patient's symptoms."

It is essential indeed that the surgeon determine if the function of the stomach or intestines is so interfered with as to modify results. The operative technic and thoroughness of the operation have much to do with the comfort and well-being of the patient after the operation. The carefulness of the work and the method of closing the peritoneum and abdominal wall determine to a great extent whether or not the patient remains well thereafter.

## PREEXISTING DERANGEMENT OF THE FUNCTIONS OF THE ALIMENTARY CANAL

In a paper read before the Western Surgical Association, April 10, 1909, on "Chronic Dilatation and Prolapse of the Stomach," I demonstrated the importance of this condition in relation to abdominal surgery I especially emphasized the fact that a stomach which is much dilated or prolapsed works less perfectly and causes much more distress following operations because of retained contents than one of the normal size and in normal position.

Recently I have had several cases in which chronic dilatation and prolapse of the stomach existed, and it was predicted at the time that these patients would have much postoperative disturbance, such as nausea, vomiting and distention. This was verified in nearly all instances. In operative cases having no enlargement or prolapse of the stomach there was less postoperative pain and often no vomiting or distention.

In persons who had previously been operated on for other troubles, with much discomfort following, and in whom there was found a badly prolapsed and dilated stomach, causing such impairment of functions that it was deemed necessary to do something specifically for this dilatation or prolapse, when the stomach was suspended in the proper position by operation little or no postoperative gastric disturbance arose.

Thorkild Rovsing has given sufficient evidence of the importance of a prolapsed stomach and colon and reports sixty-three personal cases in which operation was performed, with 50 per cent. of positive cures and 75 per cent. of cures and improvements.

If we have any adhesions around the pylorus which interfere with the normal emptying of the stomach at the proper time, there may result a distention of this organ followed by nausea, vomiting and regurgitation of bile. A distended stomach interferes with the large and small bowel action. Kinks may be produced and fecal substance and gas trapped within isolated loops. A greatly enlarged cecum with much accumulation of mucus, infectious material and gas further adds to the distention.

Intracolonic tension produces a thinned-out atonic wall which is of less protection to the outlying serosa from infection within. There is a transmigration of the infectious micro-organisms through the thin walls and local infection of the endothelium may result.

The general intra-abdominal tension forces the coils of the intestines in close contact, and in the presence of infection or any raw or denuded surfaces adhesions necessarily follow which may be temporary or permanent according to the variety of the infection, the amount of pressure and the tissue involved. The same rule as applied to joints by Murphy holds in diseases of the abdominal cavity.

## MUCOUS COLITIS AND MEMBRANOUS PERICOLITIS

In cases of mucous colitis I have found that a thorough irrigation of the colon either in the knee-chest position, elevated hip position and right-sided flank position, materially lessens the intra-abdominal postoperative distress

This is especially emphasized when associated with that class of cases known as a membranous pericolitis, in which the operator has been compelled to separate bands of adhesions or liberate the transverse colon that has become fixed to the ascending colon. In such patients the postoperative management and subsequent treatment is important indeed, and determines to a great extent whether we bring about a better or worse condition of the patient.

I know of no class of cases in which the ingenuity of the operator is more put to the test than in this variety, as without question they are the large majority of cases that give the surgeon the most trouble following surgical work. They are the class in which frequently

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* Read before the St. Louis County Medical Society, Duluth, Minn., June 10, 1913.

the appendix alone has been removed with little or no benefit.

Postoperative adhesions are increased rather than eliminated in such cases if incomplete surgery has been performed. If the constricting bands are not separated the colon functionates imperfectly, the kinks remain, postoperative stasis and tension become quite pronounced and the suffering severe. Retained infectious micro-organisms are forced through the thin colonic walls, often producing local peritonitis with an aggravation of the membranous pericolitis.

### STATE OF THE MUSCLE TONE OF THE ABDOMINAL WALL

Persons with lax pendulous abdominal walls with little or no tone or strength to maintain the normal and proper function of the within contained intestines are liable to have inactivity of the intestines following an operation. There must be in the normal person elastic tone and tension of the abdominal muscles to facilitate the proper propelling of contents and the evacuation of waste products. If this force is wanting, the functions of the intestines and stomach are imperfect and distention, fermentation and intra-abdominal tension often result.

The strength of the abdominal muscles in suitable cases should be developed as much as possible before the operation and a substitute employed temporarily for this tone directly following the operation and further treatment continued thereafter.

### CHARACTER OF INFECTION

So long as an infection of any nature remains present within the abdomen and there is a destruction of the endothelial cells, adhesions occur, and unless the operation favors the elimination of the infection or inhibits the action of the micro-organisms it is of little or no benefit.

The operator should determine the nature of the infection in the given case. If it is of a streptococci type the aim and desire should be to remove the infectious material as thoroughly as possible; then we may expect almost perfect results and few, if any, subsequent adhesions. The same may be true in an infection from colon bacilli, but in tuberculous or gonorrheal infections it is often so impossible to remove the diseased tissue and infectious micro-organisms that we must give a less favorable prognosis.

Adhesions may have been separated at the time for various reasons, such as the removal of a diseased appendix, tube or cystic ovary, but they will recur in some instances and remain until the patient either succumbs or recovers from a general infection. In gonorrhea we may have a few adhesions contiguous to the part removed, as in the stump of a tube, but by careful systematic work we are able to eliminate this possibility to a great extent by taking out the cornual portion of the uterus and carefully covering the stump with the healthier uterine tissue and peritoneum.

### RAW SURFACES OR DENUDED AREAS LEFT WITHIN THE ABDOMEN AFTER OPERATION

Maurice Richardson expressed a belief that raw or denuded surfaces within the abdomen are the most frequent sources of intra-abdominal adhesions. Owing to the increased intra-abdominal tension following an operation, raw surfaces should be obviated as much as possible, and as little traumatism produced as is consistent with a thorough investigation and treatment of the affected tissue.

Every surgeon should be especially careful not to leave surfaces not enveloped with normal peritoneum exposed to contiguous coils of intestines. Exposed suture lines should be as few as possible within the abdomen.

All surgical work done on the female pelvic organs should be so carefully performed that little or no denuded or wounded serous membrane remains within the abdomen or exposed suture lines.

Tubes should be removed so completely and carefully, approximating the serous membrane above the stump and broad ligament wound with plain catgut, that there will be slight chance for loops of intestines or omentum to become fixed thereto. This same rule should apply in doing hysterectomies and in enucleating uterine fibroids, and in the removal of cysts of the ovaries or resection of them fine plain catgut alone should be used to approximate the parts, as this absorbs early. We should be especially careful if more or less infected tissue remains at or near the point of the suture line.

In stomach, intestinal and gall-bladder surgery there is more or less soiling of the serous covering, and if any exposed denuded surface remains, it should be surrounded with omental tissue when suitable and possible.

If there is an unavoidable denuded surface left, detached omental grafts are in most instances best employed. They are preferable to such material as gutta-percha, silver foil, rubber, silk, Cargile membrane, petrolatum, etc.

When an actual cautery can be employed to a raw surface, there is less likelihood of adhesions from deep cauterization, for when the scab separates there is usually a healthy membrane beneath.

### REMOVAL OF APPENDIX

A number of operators are content, in ligating the stump of the appendix, to leave it exposed within the abdomen. It seems to me that this invites adhesions thereto, as we all know that the stump of an appendix has more or less infectious material within its lumen and that it must become fixed, at least temporarily, in some way or Nature must envelop this infectious material with some tissue or exudate.

I believe that there is little call for silk or Pagenstecher thread in appendiceal operations, and it may be eliminated in many other operations in which it is employed at the present day. A non-absorbable suture acts as an irritant, increasing the amount of exudate around the suture to which adhesions can and do occur. By ligating the stump of the appendix with plain catgut, cauterizing and inverting the stump, and by employing a chromic catgut purse-string suture, we accomplish all that is desired and prevent possible adhesions at this point. A number of patients have been reoperated on in which silk or Pagenstecher thread had been used, especially when used in the infected cases.

### OPERATIVE TRAUMATISM

It is surprising the amount of abuse the peritoneum will endure and recover therefrom. Surgeons who operate with bare hands or wear linen gloves no doubt injure the serosa of the intestines to a great extent by nail wounds, pressure or rubbing of the linen gloves.

The amount of traumatism and areas of denudation produced by sponges and gauze packs within the abdomen is hard to estimate. The coils of the intestines are frequently caught between the folds of gauze in endeavoring to push them out of the field of operation and are so severely injured that it is no wonder that postoperative discomfort results from ileus kinks, stasis and adhesions, at least of a temporary nature, from undue pressure, traumatism and denudation of their serous covering.

Injury to the peritoneum by sharp unsuitable retractors, artery forceps and other instruments is not uncommon.

The use of a rubber dam if there is much intra-abdominal tension may, in some instances, be called for: the surgeon should at least place the patient in such a position as to have the intestines gravitate to a point away from the field of operation and carefully and systematically hold them back with moist rolls of gauze and not necessarily crowd them roughly away from the field of operation so as to produce injury of their serous covering.

All unnecessary wounds of the visceral and parietal peritoneum should be avoided, as to these areas omental adhesions are wont to occur or coils of intestines to unite.

### UNDUE EXPOSURE OF THE VISCERA

Prolonged exposure of many loops of intestines without the abdominal cavity to cold air and extra abdominal pressure, as well as unclean skin and wound surfaces, is wrong. A portion of the circulation of these loops may be temporarily arrested with a thrombosis of some of the blood-vessels, all of which may invite postoperative ileus, intra-abdominal tension, infected peritonitis, obstruction and adhesions.

### FOREIGN SUBSTANCES

Inadvertently leaving gauze or instruments in the abdomen are unfortunate accidents and are not infrequent sources of postoperative discomfort and pronounced adhesions.

As soon as the abdomen is opened only large pads should be used to sponge out the abdomen and large three-yard-long wet rollers of gauze used to coffer-dam the field of operation. By this plan I am sure fewer of these accidents will occur.

### DRAINAGE

The subject of drainage is a large one, on which a great deal of discussion has taken place. I long ago formulated a few simple rules which have not varied much in years. If there is a great deal of bloody exudate in an operative field within the abdomen, rubber-tube drainage with fixed or collapsible walls is utilized only so long as there remains an undue amount of discharge, usually for about forty-eight hours, when drainage is removed. Blood makes a suitable medium in which infectious micro-organisms develop. An increased amount of retained blood results in an increased area of infection or organized exudate and adhesions. The early removal of this exudate lessens the area involved and the number of adhesions following.

Septic areas are drained likewise, but for a longer time, until a channel has formed through which this exudate or infectious material may escape. Gauze drainage is seldom if ever indicated, as it drains only for a short time and becomes glued to contiguous tissues, and this gauze, on removal, separates the endothelium from the intestines or inner surface of the abdominal wall, leaving denuded areas which favor further infection and adhesions.

Drainage is established so as best to favor the exit of the discharge and no undue pressure is allowed on the abdominal viscera by drainage material, the patient being placed in a position most favorable for drainage, often laying over on the abdomen.

### CLOSURE OF THE PERITONEUM AND ABDOMINAL WALL

From secondary operations performed on cases previously subjected to laparotomies, we are convinced that the adhesions of the omentum and intestine to the suture line utilized for closing the peritoneal opening are far too frequent. Patients suffer so often with a dragging or pulling sensation at this point with such tension on the transverse colon and stomach that there is an interference with their normal function. Cramp-like pains, nausea, vomiting and stagnant stomach and bowel contents frequently occur, due to a kinking of the pylorus or colon on account of this pull. Surgeons have been generally satisfied to stitch up the peritoneum with an over-and-over running suture of catgut, and have allowed this to suffice even though there may be quite large holes left in the peritoneum through which the omentum may protrude or become attached to the tissue outside of these openings.

Operators often overlook the presence of the fascia layer back of the recti in closing median incisions. This tissue is often allowed to retract and is not brought to the median line with the peritoneum. The peritoneum alone is so thin in many instances that it will scarcely hold the suture when any tension is put on it. This tissue should be included with the peritoneal suture and will lend material support thereto and often prevent postoperative hernia. It is important that the needle does not penetrate the visceral peritoneum or omentum, as temporary or permanent fixation of the tissues so caught may result and much discomfort, or even obstruction of the bowel, occur.

I have also endeavored to pass the suture in such a manner as to have the healthy serous membrane in close apposition to the opposite side by passing the suture back and forth; this is a running Halstead suture according to the Murphy method. This plan gives a less suture-surface exposure and minimizes the raw places within the abdomen.

Direct muscle and fascial approximation are important in closing the abdomen. A running stitch of chromic catgut, including the fascia and muscle, alternately with a stitch including fascia alone, makes a careful approximation. I have followed this method for a number of years and have had very satisfactory results where drainage due to abscess was not necessarily established. Postoperative hernia is so often followed by impaired bowel function and by adhesions with so much suffering that it should never occur in clean cases.

### POSTOPERATIVE MANAGEMENT OF THE CASE

If intra-abdominal tension is one of the factors in the production of postoperative distress and danger, we should consider all elements in the production of this tension and prevent or eliminate them early. First and most important is acute gastric dilatation. In such cases the stomach-tube should be used as soon as much gastric distention is recognized and before any amount of distress has been experienced, especially in cases in which a chronically enlarged or prolapsed stomach has been observed.

This procedure will prevent many cases of so-called postoperative peritonitis and heart weakness. It will save many lives and go a long way toward preventing the adhesions which follow in the wake of operations.

Surgeons are more neglectful of the kind and amount of food and drink that their patients receive after operations than they should be. Few patients with stomach disturbances can stand the carbohydrates; these often cause distress and distention. Such patients do not endure cold drinks well. Hot alkaline aqueous solutions and hot liquid food are best tolerated to begin with. A rise of temperature, pain, distention and a blocking of the drainage-canals follow in too early and forced feeding. Pus is forced into other abdominal recesses with enlarged patches of peritonitis and adhesions.

The position of the patient should also be considered if there has been a considerable amount of pelvic work done not requiring drainage, and especially if there is a prolapsed stomach elevating the foot of the bed will assist restoration of position and function of the stomach and intestines, often avoiding the possibility of adhesions within the pelvis. Hepatic and splenic kinks of the colon may be overcome at times by this procedure. Many cases should be observed for weeks and months after operation, especially cases of visceroptosis and membranous pericolitis associated with colitis, as by selecting the diet for the patient and insisting on proper exercise and support for maintaining the tone of the abdominal muscles and a suitable course of treatment to overcome the colitis, symptoms formerly the outgrowth of this disease will, as a rule, be permanently removed.

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# ERYSIPELAS

## CLINICAL OBSERVATIONS ON 800 CASES, INCLUDING 95 TREATED BY BACTERIAL VACCINE AND 20 TREATED BY PHYLACOGEN

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The observations which follow are drawn from my experience with 800 cases of erysipelas which have been under my care in the erysipelas wards of Bellevue Hospital during seven periods of service from February, 1909, to April, 1913, an aggregate of forty-two weeks.

### DURATION

So many claims have been advanced for the efficacy of various forms of treatment in limiting the duration or extent of this disease, that I have had especially in mind to determine the average febrile period of various forms of erysipelas (drawn from a large series of cases practically untreated), in order that there might be a background on which the effects of treatment might be contrasted. In reckoning the febrile period, I have counted the days from the onset of the disease until the rectal temperature has remained at or below 100.

1. Uncomplicated facial erysipelas cases (500) ran an average duration of 6.77 days.
2. General body and migratory cases (fifty-six) averaged 14.44 days.
3. Leg cases (thirty-three) averaged in days, 10.88.
4. Complicated cases (211), including facial, body and extremity types of cases in which there was concurrent disease, that is, septicemia, extensive cellulitis, mastoiditis, empyema, tuberculosis, rheumatism, pneumonia, acute alcoholism, etc., were so variously influenced by the complication that an average duration loses significance. But in these cases the average duration is about two weeks

From year to year there was some variation in duration. That is, in 1910 and 1911, the average in days for facial cases was 7.3, whereas in 1913 it was but 6.3. In making up these averages there were numerous cases which lasted only two, three or four days, as well as a number which lasted ten, twelve or rarely twenty days.

### FEVER

The temperature in the facial cases usually was high, that is, from 102 to 104, was remarkably remittent and irregular in type in the majority of cases and the termination was by lysis. The temperature curve in quite a number of them resembled that of lobar pneumonia, rising abruptly to 104 or 105, and there remaining for from five to seven days and falling suddenly as the disease defervesced by a typical crisis. Afebrile cases are rare but I have records of eight such cases of typical facial erysipelas, or 1 per cent. of the series.

### OCCURRENCE

*Sex.*—In our cases at Bellevue among adults, males were affected more often than females in the ratio of 2:1, due, undoubtedly, to their greater exposure to inclement weather, their greater liability to face and scalp wounds, their addiction to alcohol and to less cleanly habits.

*Season.*—Numerically, erysipelas is a disease of the colder and spring months, for in contrasting my periods of service in February and March with those of August and September, the former showed two and one-half times as many cases as the latter; especially was this true of the facial type of cases which were thrice as numerous in the colder months. The prevalence of colds in the head with abrasion of the nasal mucous membrane often affords a point of entry for the infection.

*Age.*—Infants (under 2 years of age), sixty-three cases, approximately, 8 per cent. Children from 2 to 16 years, approximately, 1 per cent. Adults from 20 to 55 years, approximately, 88 per cent.

### ETIOLOGY

The point of entrance of the infection in facial type of cases, which number nearly seven-eighths of all, was through the nasal mucosa in the great majority, who gave a history of a preceding coryza. In others there were abrasions or wounds of the face or scalp, from operations on the nose, from operations for mastoid disease, from eczema of the scalp in infants, etc.

The cases in which there was a wide-spread body involvement either were migratory from the face or extremities or, as was common in infants, began with an infection of the umbilicus, an irritation of the buttocks and vulva or originated about operative wounds of the chest or abdomen. Leg ulcers and wounds accounted for the cases which developed on the extremities.

### ONSET AND COURSE

Chills, general malaise, headache and rise of temperature generally ushered in an attack, and preceded the appearance of the local lesion by from twelve to twenty-four hours; although in many cases the pain, burning and redness of the skin were the first symptoms noted by the patient. Vomiting had occurred in only a few of our cases.

The febrile movement and the duration in the average cases has already been mentioned. Typical facial erysipelas which starts at the bridge of the nose and spreads in butterfly pattern rather symmetrically over the cheeks, may remain thus limited, but in many cases it proceeds to involve the ears, the forehead, the scalp and the neck, down to but not beyond the collar-line, except in the small percentage of cases which are of the migratory type. The characteristic appearance of the lesion, the early bleb-formation and the succeeding desquamation, I shall not attempt to describe.

Erysipelas, which starts on the face or trunk and spreads to the extremities, usually travels down both arms or legs with remarkable symmetry from day to day. Naturally, erysipelas which begins low on an extremity travels upward toward the trunk, the only direction in which it may extend, but I do not believe that this is at all influenced by the lymphatic flow, for I believe that one of the most important points about erysipelas is that it spreads as easily in directions counter to the lymphatic current as with it and that this fact is valuable in differentiating it from the redness of a cellulitis or lymphangitis. The advancing border, too, is usually irregular, with tongue-like projections.

### SEQUELAE AND COMPLICATIONS

Superficial abscesses in the eyelids are very frequent and often there are collections of pus deeper in the cellular tissues of the areas over which the erysipelas has traveled. In other cases septicemia develops with the formation of metastatic abscesses.

Pneumonia is a frequent concomitant, especially in the winter season and among those addicted to alcohol. Nephritis, as shown by albumin and casts, was often a feature of cases in which high temperature was present, but the three deaths due to nephritis were in cases in which nephritis already was chronic.

### RELAPSE AND RECURRENCE

Both are notoriously common in this disease and it would seem that, as in pneumonia, the result of the infection was to lower resistance, rather than to confer a lasting immunity. More than 10 per cent. of our cases gave a history of one or more previous attacks and I feel sure that more careful histories would show a much larger number of such patients. Several patients had had as many as six previous attacks.

### CONTAGION

Is erysipelas an easily communicable disease? In my opinion and experience, it would seem to be not more so than streptococcus and staphylococcus wound infections, cellulitis, abscesses, etc. Undoubtedly erysipelas is inoculable from one part of the body to another and from one patient to another, given a point of entry, but with modern aseptic precautions this should occur no more often than does the infection of a clean wound from a suppurating wound in the next bed in a surgical ward.

My reasons for this opinion are as follows: In our 800 cases there were only four which suggested contagion; in one, a male nurse, who had worked for several months in a ward with twenty erysipelas patients contracted facial erysipelas after a cold in the head. The other three developed before entrance to the hospital and were in children; one nursing infant contracted erysipelas from its mother; the remaining two were in children under 4 years of age whose mothers were coincidently affected.

It is significant that no more than three cases of family contagion occurred in a series of 800, drawn largely from crowded tenement conditions of life; especially when one considers that very many of the patients remained in their homes during three to five days of the disease without any isolation, and also that many returned to their homes while desquamation was still in progress. Mothers frequently continue to nurse their infants in our wards while the infants are passing through an attack of erysipelas, and yet no mothers have contracted the disease. No cases of erysipelas developed in our wards among the very numerous cases of cellulitis and lymphangitis which were admitted under erroneous diagnoses. No cases developed among any of the visitors, nurses or doctors with the exception of the case previously mentioned.

### MORTALITY

In the series of 800 cases there were ninety-three deaths, or 11.625 per cent. The distribution according to sex and age was as follows:

Adult males, 480 cases with 49 deaths or 10.21 per cent.
Adult females, 257 cases with 19 deaths or 7.4 per cent.
Infants (under 2 years), 63 cases with 25 deaths or 39.7 per cent.

According to the lesion the mortality varied as follows:

Facial cases, 500 with 27 deaths or 5.38 per cent.
Body cases, 56 with 28 deaths or 50.0 per cent.
Leg cases, 33 with 9 deaths or 27.3 per cent.
Complicated cases, 211 with 29 deaths or 13.7 per cent.

The type of the disease usual among infants is of the migratory or general body form and hence the mortality is highest among them. As to the facial type of cases it is noteworthy that in the 173 cases in adult women there were but three deaths, or 1.73 per cent. Addiction to alcohol, so common among adult males, accounts in part for the great discrepancy, between the sexes, as it predisposes to acute alcoholism and pneumonia as well as intensifies the toxemia of the disease.

The causes of the ninety-three deaths so far as they may be clinically differentiated, seem to fall under the headings which follow, although the alcoholism and toxemia cases were often combined.

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|---|---|
| Toxemia of erysipelas | 36 |
| Septicemia | 19 |
| Pneumonia | 16 |
| Nephritis | 3 |
| Endocarditis | 3 |
| Acute alcoholism | 16 |

### DIAGNOSIS

The diagnosis of typical facial erysipelas is usually easily made from the characteristic skin appearance, the fever, the bleb-formation and the desquamation, but even here cases are frequently sent in as those of erysipelas when there is merely an area of inflammation about an infected scalp or forehead wound. Erysipelas of the legs or arms or body, unless it be in cases which have extended from the head, presents much more difficulty in diagnosis and I believe that it is often impossible to differentiate cases of erysipelas in the leg from cases of cellulitis or lymphangitis.

Certainly in my experience, about half of all the so-called cases in the leg which were admitted to the erysipelas ward were cases of cellulitis pure and simple, and were at once cleared up either by wet dressings or on giving exit to the pent-up pus, and yet these very cases may have been pronounced erysipelas by competent surgeons and had been transferred on account of such a diagnosis from surgical wards in various hospitals of this city. A visit to the erysipelas wards during August and September when, as has been said, cases of the facial type are much less numerous, rather gives the impression that the wards are those in which patients with cellulitis of the legs and suppurating wounds are being treated.

The great difficulty in making a diagnosis when erysipelas starts on the extremities or the trunk lies in the fact that, in these cases, the *advancing border* is usually less well defined and elevated than in the facial type of cases, perhaps from the presence of a larger quantity of subcutaneous areolar tissue, which is able to accommodate the thickened deeper layers of the skin, without causing marked elevation of the margin.

### TREATMENT

*Internal Medication.*—The administration of iron and of quinin has been long recommended for erysipelas and we have used these remedies in many cases without seeing any striking beneficial results. In fact the iron often deranges the already enfeebled digestion. For this reason in most of our cases no internal medication was prescribed aside from sedatives, stimulants and cathartics as might be needed.

*Local.*—The routine treatment for cases of facial erysipelas in our wards consists in the use of continually wet cold compresses. Beside each bed is a bowl of boric-acid solution in which ice is placed and cloths frequently moistened with the solution are continuously kept on the face. This method is simple, cleanly, harmless to the eyes, inexpensive and seems effectually to relieve the pain and burning in the affected area. For cases in which the leg or arm is involved, wet dressings of boric acid or aluminum acetate are used.

The use of local applications in migratory cases in which there is involvement of the body is more difficult and indeed wet dressings would both be uncomfortable and, in the cold months, might predispose to pneumonia; usually no attempt is made to cover these areas, but occasionally ichthyol is applied or the areas are painted with picric-acid solution.

The use of solutions of phenol (carbolic acid), mercuric chlorid, etc., is dangerous and does not limit the spread of the lesion and accomplishes no more than plain water or boric acid. We have painted the area and circumscribed it with pure phenol, with strong tincture of iodin, with ichthyol, with collodion and with picric acid, only to behold the erysipelas spread readily and rapidly beyond these barriers, unless the case were itself a very circumscribed one, as is often encountered on the face or neck. Phenol, 1:40, we have injected into and under the skin at a distance from the advancing margin, but in each case the disease advanced beyond this line at one or more points, and in one case there resulted a very ugly slough of the skin at the site of the injection. Ichthyol, which is the most widely used local application, does not give the patient as much relief as cold compresses and besides it is dirty and not curative.

### VACCINE TREATMENT

Through the kindness of Dr. T. W. Hastings and Dr. Elser of the Cornell University Medical College Laboratory, and of Drs. Youland and Boehm of the Bellevue Hospital Laboratory, who prepared vaccine for us, we were enabled to use vaccines in ninety-five cases out of the eight hundred.

*Mortality.*—Of the ninety-five vaccine cases, sixty-four were, on admission, of an uncomplicated facial type and there were four deaths; thirty-one were of the leg or body type and showed seven deaths; a mortality of 11.5 per cent. in the ninety-five vaccine cases as against 11.625 per cent. in the whole series of eight hundred cases.

*Duration.*—The average febrile period in the sixty-four vaccine cases of the facial type was 7.8 days; the average in days of the thirty-one cases of the body and leg type was 15.4 days. Both these figures are slightly larger than in the whole series of eight hundred cases, as before noted.

*Immunity.*—Four patients had recurrent attacks of erysipelas within from two to ten days after the attack during which they had been given from five to seven increasing doses of vaccine.

*Limitation of Lesion.*—In cases in which there was localized facial erysipelas on admission, in which vaccine treatment was then instituted, at least seven developed the migratory form of the disease which spread down over the body.

*Effect on Symptoms.*—No constant or significant effects were to be noticed either in the temperature curve or in the symptoms of the disease after these injections, and such irregularities as occurred on the charts were to be found on many charts of untreated cases which were in the wards at the same time.

*Complications.*—Cellulitis and abscesses occurred in some of the vaccine cases as in those not so treated.

*Preparations and Dosage of Vaccines Used.*—In 1909 stock erysipelas vaccines prepared by Drs. Hastings and Elser from a virulent case, were used as follows:

Dr. Hastings' vaccine at intervals of two and three days, in doses ranging from a minimum initial dose of 15 millions up to a maximum final dose of 300 millions. One facial case, after receiving on the fourth, fifth, sixth, seventh and eighth days, respectively, 30, 60, 90, 225 and 300 millions, had an immediate relapse and ran a total fever duration of fourteen days. Dr. Elser's vaccine was given daily in constant dosage of only 6 millions.

In 1910 we used a stock vaccine from a virulent case, in daily doses of 10, 20, 40 millions, thereafter continuing at 40 millions.

In 1911 Dr. Boehm prepared a polyvalent vaccine of a number of strains of streptococci from cases of erysipelas which was given in daily increasing doses; thus 10, 20, 30, 50, 80 millions, rarely exceeding 50 millions.

In 1912 Dr. Youland made up a similar polyvalent vaccine from ten different strains of erysipelas streptococci. This was given in daily doses, beginning with 5 10, 20, 30, 50, 80 millions, rarely exceeding 50 millions. Also a few patients were given one single dose of 100 millions of this vaccine.

### PHYLACOGEN TREATMENT

In February and March of 1913, Parke, Davis & Co. volunteered, through their representative, Dr. Waldecker, to supply us with their Erysipelas Phylacogen for trial in a series of cases. Their representative personally superintended the selection of cases, and the administration of the Phylacogen. As the Phylacogen was used only in one season and not over a period of years we must contrast it with the statistics of all cases in the wards at the same time.

*Mortality.*—We had a total of one hundred eighty cases of erysipelas with nineteen deaths, or 10.6 per cent. The twenty Phylacogen cases showed two deaths, or 10 per cent. Of the Phylacogen cases sixteen were of the facial type, the treatment usually being instituted on the second, third or fourth day.

*Duration.*—The average febrile duration was 6.5 days, whereas in the same period there were 115 facial cases not treated, which showed an average duration of 6.3 days. The four Phylacogen cases of the body type had a duration of 15.75 days, against an average of 13.4 days in the remaining 17 cases not so treated.

That neither immunity nor limitation of the disease were afforded in the Phylacogen cases is instanced by the following:

One man, C. B., during his first attack of facial erysipelas received three injections of, respectively, 2, 4 and 6 c.c. of Phylacogen and was readmitted a few days later with a recurrent attack.

A strong laboring man of alcoholic habit received on the third, fourth, sixth, tenth and nineteenth days of the disease, respectively, 3, 7, 10, 10, 10 c.c., but the disease, at first limited to the face, later spread over the whole body and extremities, with pus formation about the elbow, and death resulted on the twenty-second day.

*Effects.*—After administration of the Phylacogen I could see no constant influence on the temperature. In some cases there was an immediate rise, followed next day by a fall; in others the temperature rose and remained higher; in still others there was no change. In a number of cases the area of injection was very painful and complaint of it was made by the patients.

Inquiries made as to the subjective symptoms showed that a few of the patients felt chilly after the injection, but as concerned relief of pain or discomfort I could elicit no difference between those treated by Phylacogen and those not so treated.

*Administration.*—The injections of Phylacogen were made subcutaneously on successive days, beginning with 2 c.c. and increasing 2 c.c. daily up to but not exceeding 10 c.c., which last dose might be repeated. Just what is represented by this dosage I do not know, for I was not informed.

### CONCLUSIONS

1. Facial erysipelas is a self-limited disease with an average febrile course of less than seven days; therefore any remedy employed must have an immediate effect if it is to influence the course of this form of erysipelas, as many cases do not come under observation until the third or fourth day.

2. Vaccine treatment, as administered in the preceding series of ninety-five cases, will naturally be open to much criticism by enthusiasts in vaccine therapy, and it may be said by one or another that the preparation or the dosage, or the intervals were incorrectly planned and administered. In answer, I can do no more than submit the results as seen in the ninety-five vaccine cases in the series of eight hundred cases and refer again to the fact that different preparations, doses and intervals were to some extent tried out. The difficulty of obtaining cultures and preparing autogenous vaccines and the short duration of the average case, render this form of vaccine very difficult to employ.

From our experience with vaccines in erysipelas I must state that the duration of the disease was not at all lessened, the mortality remained at the same level, and there was no immunity guaranteed against recurrence, against spreading of the lesion, nor were complications, such as cellulitis and abscesses, prevented; from the statements furnished by the patients, moreover, I could not gather that there was any amelioration of the subjective symptoms.

3. By inference from the series of twenty cases treated with Phylacogen, the same conclusions must be drawn. The average duration was as usual, the mortality practically the same, relapses and recurrences also occurred and pus-formation and spreading of the disease occurred in the usual proportion of cases.

115 East Eightieth Street.

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# TUBERCULOSIS OF THE GENITAL ORGANS IN CHILDREN *

OLIVER LYONS, M.D.
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We understand by this title the localization of tuberculosis in the prostate, seminal vesicles, epididymis or testicles. The results of a large series of necropsies by a number of observers show that in children tuberculosis is present in a large percentage of cases. During the first four months it is rare, but it increases rapidly as age advances. In almost every case in which it is found post mortem in the first six months of life, it is thought to be the cause of death, while in older children it is frequently found at necropsy when they have died from other causes. Even in children, tuberculous lesions of the genital organs are no longer museum curiosities, and should receive careful consideration in the classification of diseases that are known to affect these structures.

As a result of the advance in pathologic, histologic and bacteriologic investigation we are able to demonstrate that such cases are to be found and have no restriction as to months or years of life. The frequency, however, with which tuberculous disease of the genital organs occurs in children is still a disputed question.

Hutinel and Deschamps assert that it is as common in infants as in males after puberty. Broca found forty-four in 46,000 cases examined in hospital patients. Jullian found seventeen cases in 5,566 patients in private practice. It would, therefore, seem to be most frequent in private practice.

Tuberculous disease of the testes has been observed at all ages. Dreschfild reports a congenital case; Ashy one at 7 weeks, and Jullian one at 1 month. Bacillary localization in a child is rare, due no doubt to the fact that the testes in children are latent organs, having a scant blood-supply and not so predisposed to blood infection.

According to our theory of tuberculosis of the male genital organs, it is much more common after than before puberty, for it is a well-known fact that tuberculosis is more likely to affect parts in which growth and physiologic functions are most active, as for instance the long bones in children. If the internal secretion of the male genital organs is of any importance in the development of the child, there is no evidence of this activity in the histologic examination of the glands until the age of puberty is reached and the organ prepares itself for its active sexual life. Clinically, the more frequent occurrence of genital tuberculosis between the ages of 20 and 40 would seem to substantiate this theory, for at this period the physiologic activity of the generative organs is at its height.

These organs also at this time of life are more predisposed to injury and infections which so frequently precede tuberculosis in these regions. In ninety-three cases involving the testes in children reported by a number of authors, forty-four were under 2 and forty-seven over 12 years of age; that is to say, about half of the cases occur in the first period of childhood.

Generally it is localized in one testicle; however it often affects both. In the first period of childhood it occurs nearly as often on one side as the other, but after the age of 12 it occurs more frequently on the left side. This is thought to be due to disturbed circulation during walking. In my two cases, the disease was on the left side. There was no history of traumatism, but in both cases a family history of tuberculosis, and whether or not we are justified in attributing the more frequent occurrence on the left side to some difference in the return of the venous blood-supply, the same as the frequency of varicocele on the left side, remains to be proved.

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Tuberculosis of the undescended testicle in infants is very rare. Reference is frequently made, however, to ectopic testes as being predisposed to tuberculosis, yet I know of no undoubted case reported. This may be due to the fact that most all undescended testes are atrophied and the physiologic activity, while present, is very slight.

Just what condition predisposes the male genital organs to tuberculosis is at present imperfectly understood. The observations of different clinicians present no uniform views, and many times they are diametrically opposite. The fact that the disease has become generalized when studied in the post-mortem room is no valid argument for such cases as come to the surgeon presenting local areas of tuberculosis in the generative organs. It is only fair to presume that it may be disseminated from this local area the same as from other organs of the body if this source of infection is not removed.

Personally, I believe that in some cases the male generative organs are the seat of primary tuberculosis. Such cases are, of course, few compared with secondary tuberculosis complicating tuberculous affections of other organs of the body. If the tubercle bacilli enter the circulation they find in the tortuous blood-vessels of the complicated genital tract a favorable condition for their mural implantation, growth and reproduction. The frequent localization in the epididymis may be due to the fact that the spermatic artery divides when it reaches this organ, and the vessels of the epididymis are smaller and more tortuous than those of the testicle and vas proper, the blood-current therefore being slower, which with inherited taint would favor the deposition, growth and reproduction of tubercle bacilli floating in the general circulation.

It has been established by Orth and others that tubercle bacilli can easily penetrate the mucous membrane without leaving any trace. R. C. Rosenberger has demonstrated bacilli in the blood and believes that they appear in this medium at a very early period. In the intestines they insinuate themselves between the epithelial cells like the chyle and are carried to any part of the body or fall a prey to the polymuclear leukocytes. This absorption from the mucous membrane of the intestine undoubtedly plays an important part in tuberculous infection in the child.

My investigations have led me to believe that primary tuberculosis of the prostate and seminal vesicles in children is rare. It is usually considered to be secondary to lesions in the kidney or epididymis. Although there are apparently a few exceptions, I can best illustrate this by a specific instance:

Case 1.—Boy, aged 20 months, was brought to the office June 6, 1904 for circumcision. The mother stated that she had had considerable trouble keeping the baby dry for the last four or five months. Some time before the baby had been fretful, did not nurse, slept little and weighed 3 pounds less than when 17 months old. The child had never been considered healthy. The mother was tuberculous. Examination of patient showed a thin, poorly nourished child. There was considerable excoriation of the skin over the scrotum and inner side of thigh and a long redundant prepuce that could be easily retracted. The meatus was edematous and almost white. During the examination the child passed urine which seemed to be loaded with phosphates. Some of this deposit was collected from the napkin and examined microscopically and found to contain pus. No enlargement of the lymph-nodes could be found. Liver and spleen were enlarged, kidneys could not be palpated. Temperature 100.

A urinary examination was made, June 7, and found to contain pus, blood and tubercle bacilli. The same day the child was catheterized and a guinea-pig inoculated, which was found to be tuberculous five weeks afterward. On rectal examination a large, hard, lumpy mass was found in the region of the prostate and vesicles on the left side. It was difficult to say whether or not this condition extended over to the right side.

On July 11, when the guinea-pig was posted and a definite diagnosis of urinary tuberculosis was made, the child was put on supportive treatment, but the symptoms gradually became exaggerated and the patient died September 25, 1904.

Owing to the objections of the mother I was able to make only a partial necropsy. The chest cavity was found normal. The abdominal cavity and mesenteric lymph-nodes were enlarged, soft and caseous; the liver and spleen enlarged and contained many small nodules on the surface; kidneys normal.

On opening the pelvic cavity and dissecting up the bladder I found a large mass on the left side in the region of the vesicles, which on careful dissection was found to contain the vesicle and ampulla. On section it was found to be filled with caseous nodules and abscess cavities. Bladder negative.

Microscopic examination of this mass, section of liver and spleen, was made by the late Dr. Wilder, and the diagnosis returned to me was tuberculosis. The kidney was found normal.

Judging from this case one would feel that the anatomic evolution of seminal tuberculosis in a child is about the same as that noted in the adult. The only difference is that the Koch bacilli seem to develop more rapidly in an undeveloped organ which, having a feeble blood-supply, cannot resist the infection. Also combative phagocytic power of the cells is less pronounced than after growth has been attained.

As a child cannot interpret its symptoms, rectal examination is necessary for a satisfactory knowledge of the existing condition in the vesicle. The base of the bladder and prostate are easily outlined and any change in form and consistency is readily made out. The source of tuberculous infection is of course the tubercle bacilli, from the tuberculous man or animal.

There are five theories as to the portals of entry into the body: (1) that tuberculosis is always intra-uterine in origin, due to placental infection; (2) that infection takes place from the inhalation of dried tuberculous sputum or fine, moist droplets expelled by coughing; (3) that the source of infection is through the gastro-intestinal tract; (4) that the source of infection is through the urethra, and (5) that infection occurs by metastasis.

As to the first or congenital theory, in the investigation of any case of tuberculosis in a child, the family history is important regarding tuberculosis as well as the history of definite exposure to infection. It is the custom in some places to ridicule the idea of heredity predisposing the offspring to tuberculosis, even if this transmission of the disease from parent to child is not admitted. Certainly it may be said that the child of tuberculous parents will have a predisposition to the disease.

It is quite true that these children may be infected from some other person who has consumption, or through the medium of milk, but this will not explain the cases found in the first few days of life. If there has been tuberculosis in the parents, then the child in adverse circumstances will almost certainly be more liable to contract the disease on exposure to infection than a child whose family history is not marred by the presence of tuberculosis. In other words, if two children of the same age were taken, one with a family history of tuberculosis, the other with no such history, and if these children living under the same environments became exposed, most certainly the child with a tuberculous taint would be the first to contract the disease.

The frequent localization of the tuberculous lesions among children in parts of the body not readily exposed to external infection must be regarded as congenital. Proof of metastatic infection through the blood may be made by microscopic examination, which would show an obliterated blood-vessel in the center of the tuberculous focus. Such pathologic examinations of the lesion may explain the cause of some localized foci of tuberculosis, but we would have a comfortable number of lesions left in which we could not explain the origin.

It is probable that the most common portals of entry are the nasopharynx, tonsils, lungs and intestines, for corresponding to these portals of entry we find primary infection of the cervical, bronchial, and mesenteric lymph-nodes. In many instances these lymph-nodes are primarily effected, the genital lesion being secondary. The difficulty is as to how the infection is to be diagnosed, as in many cases in which the bronchial and mesenteric lymph-nodes are involved the diagnosis would be purely hypothetical. It is a well-known fact that tuberculosis of childhood is essentially a disease of the lymph-vessels, usually represented by a chronic adenitis, and were it not for the fact that Nature has provided the infant with a lymph system of wonderful defensive power, they would all contract tuberculosis, for the infant is more exposed to house infection than any other member of the family—from kisses of a tuberculous person, dirty handkerchiefs and contaminated objects which they carry to their mouths, such as dirt under the finger-nails, which frequently contain tubercle bacilli. All these factors favor the introduction of germs into the digestive tract. The frequency with which the mesenteric lymph-nodes are found involved in infants rather favors the intestine as a more frequent portal of entry.

The entrance of the tubercle bacilli through the urethra must be very rare. It is asserted by some writers that the tubercle bacilli, being devoid of motion, must rely on the circulating currents for its transportation; besides, they are unable to develop in the secretions and are therefore powerless to resist the secretory currents. Nevertheless, urologists are all familiar with the clinical fact that foreign bodies when introduced into the urethra have a tendency to be carried by the mucous currents in the direction of the bladder, and it is reasonable to assume that micro-organisms lodged in the meatus are conveyed in a similar manner along the urethral tract, but unless they become arrested on a soil favorable for their growth they produce no symptoms. But should primary tuberculosis of the urethral tract take place, it would do so only at a point where the mucous membrane has been prepared for their reception by some antecedent injury or disease.

The fact is, the history of tuberculosis in childhood is against any one exclusive portal of entry; but if one clinical fact is as good as another, it is evident that there are several points through which the invasion may take place, and also that when once implanted in the genital tract, advance may be made in more than one direction.

The onset of the disease may be sudden or gradual, and varies with the presence or absence of mixed infection. The truth may be that primary tuberculosis confined to the genital organs of children causes no symptoms, and these children are seldom seen by the doctor for this condition.

The second case I wish to report falls into this class:

CASE 2.—Boy, aged 7 months, seen Sept. 3, 1908. About three or four weeks before, the mother first noticed swelling in the left side of the scrotum. This had gradually increased in size but had caused no pain or other symptoms referable to it. The mother had come to Colorado for tuberculosis three years before. There were no other points of interest.

*Examination.*—General nourishment good. Scrotum presented on left side an ovoid mass about the size of a walnut; several nodules could be felt along the outer side of the mass. On the inner side, high up, a soft mass appeared, surrounded by a hard, fibrous ring. This was thought to be the testicle proper. The spermatic cord was apparently not involved. Rectal examination showed the prostate and seminal vesicles to be normal, as was the opposite testicle. Diagnosis of tuberculosis of the epididymis was made and operation advised, but was refused by parents. The child was seen at odd times until Nov. 25, 1908, when there appeared a softened area in the lower part of the mass. No other changes could be noted. After some time I gained permission of the parents to open this soft area. A considerable amount of thick, caseous material was found. This was diluted with distilled sterile water and guinea-pigs inoculated, which proved positive to tuberculosis when killed in five weeks. Guinea-pigs inoculated with urine at same time were negative. The cavity was packed with iodoform gauze a few times and then let alone, owing to the difficulty of keeping dressings in place. The mass gradually diminished in size, however, the fistula remained open for some months. When the patient was last seen, March 28, 1913, he was in perfect health, the only evidence of his testicular trouble being a rather thick fibrous cord running from the site of incision in the skin to the globus minor.

Tuberculosis of the genital organs is more frequently found in the post-mortem room in children who have died of other diseases. The gradual onset is much more common, as the disease develops painlessly and insidiously. Attention of the mother is usually first attracted by the presence of a swelling of the testicle. This may be first noticed when a complicating hydrocele develops, as this rather sudden accumulation of fluid would more likely attract the mother's attention. Hydrocele is rarely large when due to tuberculosis in the epididymis, and there is very little difficulty in making a diagnosis. In some cases, however, the child is not brought for treatment until caseation has taken place, and attention is first drawn to a discoloration on the scrotum, the swelling being only slightly tender. The following case will illustrate this point:

CASE 3.—In A. J. S., aged 16 months, seen March 20, 1908. Swelling and hardness of the scrotum were noticed two or three months before. A physician was consulted, who advised hot applications.

A few days ago the mother noticed that the swelling was rapidly increasing in size and I was asked to see the case.

The mother's father and one brother had died of tuberculosis. The mother had been sent to Colorado for suspected tuberculosis. The general health of the child had been good; it never had been sick before and there was no history of injury.

*Examination.*—Left scrotum very large, owing to complicating hydrocele. An apparently somewhat enlarged mass was found below and behind the fluid sac. Rectal examination was negative, also the right testicle and epididymis. [illegible] 22 the hydrocele was tapped and 40 c.c. of a cl ing. In my two cases, the disease was on the left side. There was no history of traumatism, but in both cases a family history of tuberculosis, and whether or not we are justified in attributing the more frequent occurrence on the left side to some difference in the return of the venous blood-supply, the same as the frequency of varicocele on the left side, remains to be proved.

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It is quite true that these children may be infected from some other person who has consumption, or through the medium of milk, but this will not explain the cases found in the first few days of life. If there has been tuberculosis in the parents, then the child in removed, as well as the iliac lymph-nodes. The patient is still alive and has had no recurrence.

Case 2.—M. D., aged 24, single, farmer, was admitted to Douglas County Hospital Jan. 1, 1913. Family history is negative; personal history is also negative except for the following: The patient was thrown on the horn of a saddle six years ago and injured the right testicle. The organ enlarged, later became hard and caused a dragging pain. He says a hernia appeared last June, which caused him a great deal of trouble. Three years ago he fell over a piece of timber and hurt himself in the region of the stomach, but noticed no discomfort from it later.

Three months ago he sprained his back in lifting a sack of wheat into a wagon-box, and three days later he rode a horse and noticed that his abdomen was painful. At first they were cramp-like pains. The pain increased and the abdomen became hard and tender. It has gradually increased in size from the time of the sprain. Appetite has been poor for the last month and eating caused cramps. Bowels have been irregular and difficult to move.

Genito-Urinary: Did not have to get up at night before injury, nor was there pain or burning; but since being hurt he has had pain, burning and difficulty in urination. Sometimes has to be catheterized.

Hospital records from January 1 to January 5 show that the patient had a tense abdomen, complained of pain after eating, was restless, had severe pain in abdomen and back not related to eating, and rested only under the influence of morphin. During this time his temperature ranged between 96.6 and 100.6 F., respiration 20 to 26 and pulse from 86 to 130.

*Operation.*—On January 5 he was operated on, the right testicle being removed and the abdominal mass drained. Subsequent to the operation there was great increase in the rate of the heart; later the pulse, temperature and respiration were between the limits given above. There was considerable postoperative hemorrhage and discharge of sanguineous material and cell detritus through the drain, but the patient rested fairly well and on January 12 complained of no pain. On the night of January 13 he complained of severe pain in the left ear, and on January 15 there was a discharge of a large amount of watery fluid. At 4 p. m. there was about 20 ounces of dark-green emesis. At 8 p. m. the pulse became weak; later the pulse and respiration began to fail, and patient died at 11 p. m.

*Necropsy.*—The findings have no bearing on the tumor, except the following:

Liver much enlarged, adherent to diaphragm in entire extent of contact. Greater part of liver substance is replaced by a reddish-gray, purulent fluid resembling anchovy sauce. Weight about 1,500 gm. (does not include fluid; Orth gives the weight of the liver for adults as varying from 1,000 to 2,000 gm). Adhesions between transverse colon and stomach. Colon bound down in entire extent by adhesions.

Tumor, in upper abdomen, and apparently retroperitoneal. There is a large mass to which the small and large intestines are adherent. This mass contains a large amount of semifluid, chocolate-brown substance like anchovy sauce, in which are curd-like masses. The fluid is very abundant and spurts forth actively as the incision is made into the degenerated tumor mass.

Right testicle previously removed. Left apparently normal. Weight plus epididymis and appendages, 37 gm.

Lungs large, no adhesions; some anthracosis; some discolorized areas; anemia; some edema. Some areas cut with normal elasticity, but greater part of lung tissue is replaced by areas of same material as in the tumor and liver. In the upper right lobe an area of tuberculous appearance is found; cut across it is gritty to the knife.

Heart normal. Shape normal. Color slightly anemic. Consistency rather firm.

Lymph-nodes of neck filled with same pus-like material as found elsewhere.

*Microscopic.*—Liver: Accumulation of pigment, evidently both of hematogenous and hepatogenous origin, about the central vein and Glisson's capsule, especially the former. Some small round-cell infiltrations, especially about capsule. Marked congestion; increased connective tissue in capsule; general fatty degeneration. Area of metastasis: Areas of large round cells; much connective tissue, also congestion and some small round-cell infiltration. Area shows marked cystic degeneration.

Lungs: Emphysema; anthracosis slight; atelectasis, congestion, some blood pigment, some small round-cell infiltration, especially beneath pleura. Area of calcification: Tuberculous nodule surrounded by connective tissue, and small round-cell infiltration marked.

Tumor: Mixed type, no regularity in formation of tissue cells; there are spindle-cells, some small round cells, and a few large round cells, all probably of connective tissue origin. Pus cells are numerous and there is much degeneration and necrosis so that the blood-vessels are not apparent. There are cell nests composed of cells epithelial in character.

Right testicle: Some parenchymatous degeneration; slight increase in connective tissue; marked congestion.

Left testicle: Shows areas of round-cell infiltration; large amounts of free blood; lymph stroma contains alveolar areas of epiblastic tissue and areas resembling the corium, showing syncytial cells with Langhan's cells and areas of cartilage.

These two cases present many points of interest. In the first there was no sign of metastases except those referred directly to the testicle. The cord was not enlarged to any extent and the entire tumor seemed to be local. We made an incision extending from the symphysis pubis to the anterior superior spine and removed the testicle, the cord, the retroperitoneal fat and the cord around the pubis with all its veins and tributary blood-vessels and lymph-nodes that we could find nearly to the prostate.

The patient made an uninterrupted recovery and is still living, two and a half years after the above.

The second case was seen late in its history. With the distended abdomen and the tuberculous family history, the intern in the hospital made a diagnosis of tuberculous peritonitis with the possibility of a tuberculous epididymis. The patient was anesthetized and the abdomen opened only to find the peritoneal cavity empty and the mass entirely retroperitoneal with liver metastases. The mass was a soft, bloody, grumous looking material resembling anchovy sauce. The testicle was removed. In three days the patient died, and at the post-mortem specimens were taken from the lungs, liver, thyroid, glands of the neck and kidneys, with the result enumerated before.

On microscopic study of the slides from these sections the diagnosis of mixed tumor of the testicle was made.

In the first case, after a careful study, we found the dominant cells to be epithelial, while in the second, at least in the metastatic growths, the dominant cell was of mesoblastic origin, with many epiblastic cells as well as mesoblastic in the testicle itself.

A complete review of the literature and theories of these tumors and their origin would carry us too far into the field of pathology for this paper, and we can only call attention to the recent papers of Ewing[1] and of Wilson.[2] Ewing has given us such a masterly review of the subject that little remains to be said regarding these peculiar tumors.

Our cases are, in our judgment, both of embryologic origin, as evidenced by the presence of syncytium and the cells of Langhans, the increased amount of muscle and the presence of cartilage, the large embryonal epiblastic cells arranging themselves in an alveolar form, the prescolored fluid removed. This fluid was not examined. After removing the hydrocele fluid it was possible to make out a hard indurated epididymis. The testicle did not seem to be involved, as it was possible to make out the line of demarcation between the testicle and the epididymis. The vaginalis process was closed and the vas was apparently uninvolved. Diagnosis of tuberculosis was made, but operation refused. March 29 there was no change except a slight reaccumulation of hydrocele fluid. April 30, after a few days' application of heat, which had been advised by the previous medical attendant, the child became fretful and cross. An area of redness appeared over the lower part of the indurated mass. After doubly assuring the father that this area contained pus, I was allowed to open and drain this softened area and a teaspoonful of pus was removed. The cavity was then packed with iodoform gauze. The child was seen the next day and the gauze removed and the cavity repacked. May 3, the previous packing had been removed the day before and it was impossible to reinsert the gauze. Nothing more was done to the fistula other than keep it clean. June 17 another soft area appeared on the upper and outer side of the scrotum. The fistula below was still discharging a small amount of pus. This was opened and drained and treated as the previous abscess had been. The pus was examined for tubercle bacilli but none could be found. The fistula remained open for many weeks but finally closed.

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[1] Ewing: Surg., Gynec. and Obst., October, 1910.
[2] Wilson: Ann. Surg., April, 1913.

When this patient was last seen, in May, 1912, he was in good health and the testicle appeared normal. A small, firm band was found running from the scar on the scrotum to a rather small hard nodule in the epididymis. The tuberculous process had here been arrested and encapsulated.

Acute tuberculosis of the epididymis and testes is rare, and begins like gonorrheal epididymitis, suddenly and with acute symptoms. There is pain on palpation, the scrotum is edematous, with effusion into the tunica vaginalis, and the testicle enlarges to two or three times its natural size.

In most of these cases it is quite probable that some previously existing tuberculous nodules in the organ were present and not noticed by the mother. Abscess formation is quite rapid, and the pus may find its way to the surface and break externally, or burrow into the testes proper. A portion or all of this organ may be destroyed if the disease was primarily in the epididymis.

I have seen similar cases in the adult in which the patient would come down with a sharp, acute epididymitis on one side after severe exercise, and on examination of the other epididymis, prostate, and vesicles, find tuberculous nodules that had never been noticed by the patient.

In the case in which the prostate and seminal vesicles were found infected, frequent urination was the first symptom noticed by the mother, but as the case progressed the irritability became so marked that the patient was unable to retain his urine more than twenty to thirty minutes at a time. Tenesmus and pain became very severe toward the last in this case, for this little fellow had a crying spell after each urination.

The two patients with infection of the epididymis appeared to be in perfect general health, and nothing could be found suggestive of tuberculosis in any other organs of the body; but the patient with infection of the prostate and vesicles presented a typical tuberculosis appearance. There was loss of weight and strength, the temperature fluctuating between 99 and 101.

In the differential diagnosis, congenital syphilitic orchitis is the most common and the most difficult disease of the testes to exclude. The chief points in the diagnosis are the presence of other signs of congenital syphilis and the therapeutic test. The body of the testes is usually affected in the majority of cases as a diffused enlargement, but gumma may occur in the epididymis. The cord is rarely thickened; the prostate and vesicles never. Syphilis is almost always painless. A Wassermann reaction may be negative, but it may be possible for a syphilitic child to have a tuberculous testicle.

Sarcoma is the next frequent disease likely to attack the testicles in children, but it can usually be recognized by the rapidity with which the testicle increases in size without pain, softening or inflammatory symptoms. The cord is often enlarged, but the swelling is smooth and even. The lymph-nodes above and below Poupart's ligament may be involved early, but clinically, from the standpoint of treatment, they may be considered as one.

Hydrocele usually presents no difficulty of diagnosis. It should be remembered, however, that this condition is often a part of the tuberculosis of the testes and epididymis.

Benign tumors of the testicles, such as enchondroma, myoma, adenoma, etc., are of such rare occurrence that they need not be considered in the differential diagnosis.

The prognosis in primary tuberculosis of the genitals in children is usually favorable. Even when secondary infection has taken place and the abscess cavity opens externally, encapsulation takes place and a portion of the glandular structure is preserved. In fact, there seems to be a limitation of the tuberculous process in all organs of children, the one notable exception being tuberculous meningitis.

For the true conception of these cases, it is of importance to know that tuberculosis of these organs remains almost always the only tuberculous focus in the body; differing from later periods of life when it is frequently secondary to other tuberculous processes in the genito-urinary tract. Therefore operation may produce permanent cure, although this is not always certain.

In spite of the result obtained in these two cases, I should always advise operation.

*Metropolitan Building.*

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# THE PROBABLE EMBRYOLOGIC ORIGIN OF MIXED TUMORS OF THE TESTICLE *

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OMAHA

In presenting this paper I do not hope to add any new facts to those already accessible, only to bear witness to the position taken in the literature regarding the pathology and probable origin of mixed testicular tumors. In the last two years I have met with two cases of tumor of the testicle worthy of attention.

CASE 1.—O. M., waiter, colored, aged 29, was seen early in 1911. He gave a negative family and personal history, especially in regard to new growths. As seems to be the usual thing in these cases, he gave a history of an injury to the testicle at the age of 12 years, but had no trouble to speak of till about ten months before we saw him. He did say that he had had dull pain in this testicle at times for ten years previously, and that the testicle seemed larger than the other. During the three months before coming to us it became much larger and more painful. The testicle was

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

removed. as well as the iliac lymph-nodes. The patient is still alive and has had no recurrence.

Case 2.—M. D., aged 24, single, farmer, was admitted to Douglas County Hospital Jan. 1, 1913. Family history is negative; personal history is also negative except for the following: The patient was thrown on the horn of a saddle six years ago and injured the right testicle. The organ enlarged, later became hard and caused a dragging pain. He says a hernia appeared last June, which caused him a great deal of trouble. Three years ago he fell over a piece of timber and hurt himself in the region of the stomach, but noticed no discomfort from it later.

Three months ago he sprained his back in lifting a sack of wheat into a wagon-box. and three days later he rode a horse and noticed that his abdomen was painful. At first they were cramp-like pains. The pain increased and the abdomen became hard and tender. It has gradually increased in size from the time of the sprain. Appetite has been poor for the last month and eating caused cramps. Bowels have been irregular and difficult to move.

Genito-Urinary: Did not have to get up at night before injury, nor was there pain or burning; but since being hurt he has had pain, burning and difficulty in urination. Sometimes has to be catheterized.

Hospital records from January 1 to January 5 show that the patient had a tense abdomen, complained of pain after eating, was restless, had severe pain in abdomen and back not related to eating, and rested only under the influence of morphin. During this time his temperature ranged between 96.6 and 100.6 F., respiration 20 to 26 and pulse from 86 to 120.

*Operation.*—On January 5 he was operated on, the right testicle being removed and the abdominal mass drained. Subsequent to the operation there was great increase in the rate of the heart; later the pulse, temperature and respiration were between the limits given above. There was considerable postoperative hemorrhage and discharge of sanguineous material and cell detritus through the drain, but the patient rested fairly well and on January 12 complained of no pain. On the night of January 13 he complained of severe pain in the left ear, and on January 15 there was a discharge of a large amount of watery fluid. At 4 p. m. there was about 20 ounces of dark-green emesis. At 8 p. m. the pulse became weak; later the pulse and respiration began to fail, and patient died at 11 p. m.

*Necropsy.*—The findings have no bearing on the tumor, except the following:

Liver much enlarged, adherent to diaphragm in entire extent of contact. Greater part of liver substance is replaced by a reddish-gray, purulent fluid resembling anchovy sauce. Weight about 1,500 gm. (does not include fluid; Orth gives the weight of the liver for adults as varying from 1,000 to 2,000 gm). Adhesions between transverse colon and stomach. Colon bound down in entire extent by adhesions.

Tumor, in upper abdomen, and apparently retroperitoneal. There is a large mass to which the small and large intestines are adherent. This mass contains a large amount of semifluid, chocolate-brown substance like anchovy sauce, in which are curd-like masses. The fluid is very abundant and spurts forth actively as the incision is made into the degenerated tumor mass.

Right testicle previously removed. Left apparently normal. Weight plus epididymis and appendages, 37 gm.

Lungs large, no adhesions; some anthracosis; some discolorized areas; anemia; some edema. Some areas cut with normal elasticity, but greater part of lung tissue is replaced by areas of same material as in the tumor and liver. In the upper right lobe an area of tuberculous appearance is found; cut across it is gritty to the knife.

Heart normal. Shape normal. Color slightly anemic. Consistency rather firm.

Lymph-nodes of neck filled with same pus-like material as found elsewhere.

*Microscopic.*—Liver: Accumulation of pigment, evidently both of hematogenous and hepatogenous origin, about the central vein and Glisson's capsule, especially the former. Some small round-cell infiltrations, especially about capsule. Marked congestion; increased connective tissue in capsule; general fatty degeneration. Area of metastasis: Areas of large round cells; much connective tissue, also congestion and some small round-cell infiltration. Area shows marked cystic degeneration.

Lungs: Emphysema; anthracosis slight; atelectasis, congestion, some blood pigment, some small round-cell infiltration, especially beneath pleura. Area of calcification: Tuberculous nodule surrounded by connective tissue, and small round-cell infiltration marked.

Tumor: Mixed type, no regularity in formation of tissue cells; there are spindle-cells, some small round cells, and a few large round cells, all probably of connective tissue origin. Pus cells are numerous and there is much degeneration and necrosis so that the blood-vessels are not apparent. There are cell nests composed of cells epithelial in character.

Right testicle: Some parenchymatous degeneration; slight increase in connective tissue; marked congestion.

Left testicle: Shows areas of round-cell infiltration; large amounts of free blood; lymph stroma contains alveolar areas of epiblastic tissue and areas resembling the corium, showing syncytial cells with Langhan's cells and areas of cartilage.

These two cases present many points of interest. In the first there was no sign of metastases except those referred directly to the testicle. The cord was not enlarged to any extent and the entire tumor seemed to be local. We made an incision extending from the symphysis pubis to the anterior superior spine and removed the testicle, the cord, the retroperitoneal fat and the cord around the pubis with all its veins and tributary blood-vessels and lymph-nodes that we could find nearly to the prostate.

The patient made an uninterrupted recovery and is still living, two and a half years after the above.

The second case was seen late in its history. With the distended abdomen and the tuberculous family history, the intern in the hospital made a diagnosis of tuberculous peritonitis with the possibility of a tuberculous epididymis. The patient was anesthetized and the abdomen opened only to find the peritoneal cavity empty and the mass entirely retroperitoneal with liver metastases. The mass was a soft, bloody, grumous looking material resembling anchovy sauce. The testicle was removed. In three days the patient died, and at the post-mortem specimens were taken from the lungs, liver, thyroid, glands of the neck and kidneys, with the result enumerated before.

On microscopic study of the slides from these sections the diagnosis of mixed tumor of the testicle was made.

In the first case, after a careful study, we found the dominant cells to be epithelial, while in the second, at least in the metastatic growths, the dominant cell was of mesoblastic origin, with many epiblastic cells as well as mesoblastic in the testicle itself.

A complete review of the literature and theories of these tumors and their origin would carry us too far into the field of pathology for this paper, and we can only call attention to the recent papers of Ewing[1] and of Wilson.[2] Ewing has given us such a masterly review of the subject that little remains to be said regarding these peculiar tumors.

Our cases are, in our judgment, both of embryologic origin, as evidenced by the presence of syncytium and the cells of Langhans, the increased amount of muscle and the presence of cartilage, the large embryonal epiblastic cells arranging themselves in an alveolar form, the presence of large round cells, degenerating epiblast and chromogenetic cells.

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[1] Ewing: Surg., Gynec. and Obst., October, 1910.
[2] Wilson: Ann. Surg., April, 1913.

As to the probable origin of these tumors, the first case seemed definitely to arise from the tubules of the testicle, or, at least, the tubules presented the microscopic appearance of infiltrating the lower layers of the tissue in their proximity. This tumor would, therefore, be readily classified as a carcinoma on superficial examination.

A microscopic study of the second tumor offered no evidence regarding its origin. The last would undoubtedly fall under the theory of Ewing, that these tumors arise in the sex cells of the testicle; the first did not appear to me to be nearly so indefinite in its origin.

Once again the conclusions of Ewing and the added ideas of Wilson may be quoted, as follows:

1. Pure fibromas and pure leiomyomas of the testis exist but are extremely rare, as is also adenoma occurring in atrophic undescended testes.
2. Primary lymphosarcoma and pure spindle-celled sarcoma are of uncertain origin.
3. Chondroma, myxoma, lipoma, rhabdomyoma and carcinoma have not been shown to exist apart from a teratomatous origin.
4. Alveolar large round-celled, perivascular and other forms of so-called sarcoma testis are of epithelial and teratomatous origin.
5. The commonest tumor of the testis is an embryonal carcinoma, alveolar or diffuse, with polyhedral or round cells and often with lymphoid stroma. These tumors are probably one-sided developments of teratomas.
6. Teratoma testes arise from sex cells in the neighborhood of the rete, whose normal development into spermatogonia has been suppressed but whose potencies remain intact and ready to express themselves in the various forms of simple or complex teratomas.

Wilson's application of the theories of Blanca and Bresseto would also further tend to prove the hypothesis of Ewing, that these tumors are of sex cell origin, and are teratomas.

We believe we are justified in concluding that these two cases fall under the classification of teratomas. We note that Wilson reports six of the nineteen cases as having had previous injury. Both of our cases reported injury.

From a clinical standpoint the question comes: What is to be done with tumors of the testicle? From the evidence gathered from recent studies it would seem that tumors of the testicle, like those of the breast and parotid, are at least frequently malignant.

Given a history of trauma some years previously, with a testicle slowly increasing in size, accompanied by rather indefinite pains, continued for several months, one is justified in removing the testicle for malignancy. Some may take issue with this position, but we believe that were this done many lives would be spared, and perhaps a few benign tumors removed. Our two cases illustrate also the two extremes of duration; in one case the tumor was attacked early, and in the other late. Just at what period in the histories of these cases metastasis takes place is not clear. In general it is early, we believe. The simple removal of the testicle is, in our judgment, not indicated, even if a malignant tumor is suspected; rather the removal of the entire cord, the retroperitoneal glands along the cord and as far as possible along the iliac veins, for evidently metastasis takes place frequently along this channel as indicated by the formation of retroperitoneal masses, as the late results of these tumors frequently show. Clinically it is important to recognize them as early as possible and to do a radical operation on them.

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# OPERATIVE TREATMENT OF GENITAL TUBERCULOSIS

## INDICATIONS AND TECHNIC *

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AND
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Most of us probably hark back to the old terminology under which we were brought up which regarded genito-urinary tuberculosis as a variety of starfish beginning in the bladder and radiating more or less completely in all directions. Certain remnants of this teaching still exist, and though tuberculosis of the kidney is now generally recognized as a primary lesion for the urinary tract, it is too little recognized that the genital tract also has its primary focus of infection. The term "genito-urinary tuberculosis" should be abandoned and we should come to recognize tuberculosis of the urinary tract as primary in the kidney, while tuberculosis of the genital tract in the male is primary in the epididymis. The bladder and the structures of the bladder neck, including the prostate, are more or less common to both genital and urinary tracts, and the prostate is therefore between two fires and may be infected with tuberculosis as a secondary matter either in urinary or in genital tuberculosis. It is important, however, to recognize that the infection of the prostate is rarely primary for the genital tract, and as our knowledge of this matter extends we incline to think that primary prostatic tuberculosis will be relegated to the same class of surgical curiosities as is primary tuberculosis of the bladder.

Our knowledge of infections of the genital tract have been crystallized by the excellent work of Belfield. Perhaps his most important contribution has been in calling attention to the excretory function still maintained by the genital duct. It will be recalled that the epididymis is the remnant of the old middle kidney, and in its rudimentary excretory capacity it picks up microorganisms from the circulation in a manner entirely similar to that of the kidney. Since the prostate has no such function it is easy to comprehend why it is so rarely infected as a primary matter, though its position makes it easy to recognize the probability of its secondary involvement. One of us (J. D. B.) has shown in a recent paper[1] that the presence of primary prostatic tuberculosis is asserted in only 6 per cent. of a large collection of well-studied cases.

The relation of the testicle to genital tuberculosis is also of paramount importance. Its proximity to the epididymis makes its secondary involvement an exceedingly easy matter, and this complicates our opinion as to the relation between the epididymis and the testicle in regard to primary involvement. It is our firm opinion, based on a considerable clinical observation, that primary involvement of the testicle is rare; but we are free to admit that it was involved to some extent in the process in over 40 per cent. of our cases of tuberculosis of the epididymis. Our opinion is therefore based on

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* Read in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

[1] Barney, J. Dellinger: Med. and Surg. Jour., Boston, July 3, 1913.

the character of the process in the testicle, which appeared to be more recent and less extensive than that in the epididymis. This question is of importance as bearing on the attitude we should take in regard to removal of the testicle in tuberculosis of the genital tract, and also in regard to the importance of early operation on the tuberculous epididymis if we are to save the testicle from infection. It is only a comparatively short time since the operation of orchidectomy was regarded by the highest authorities as the operation of election for these conditions. Sound opinion has, we believe, entirely reversed this decision, but its stamp still remains on the surgical world and it is no rarity to see orchidectomy done when the involvement of the testicle by no means warrants it.

That the process reaches the prostate in a large number of the cases of genital tuberculosis has recently been shown by one of us (J. D. B.)[1] in an analysis of 101 cases from our clinic, where it was clinically present in 75 per cent. A more searching examination of these cases shows that 30 per cent. are involved in the first six months of the disease and 54 per cent. in the first year. The route by which the infection reaches the prostate is not yet clearly understood. Examination of the vas shows progressive involvement from below upward, but in few, if any, of the cases is the involvement sufficient to justify the belief that the involvement of the prostate takes place by continuity of the process. It seems fairly clear that the infection must extend by blood-stream or lymph-vessels, and we incline to the view that the lymphatic route is more common than has been generally believed.

Briefly restated, the clinical pathology of genital tuberculosis is as follows: The disease is primary in the epididymis, occasionally in the testicle, rarely in the prostate. The prostate is involved secondarily early in the disease and ultimately in a vast majority of the cases. The testicle is involved secondarily less often than the prostate and probably less early. It is of the first importance to recognize the distinction between primary and secondary involvement. The organs primarily involved show very little tendency to shake off the disease, while those in which it is secondary show a far greater power in this direction and will under favorable conditions be successful. On these facts we shall undertake to support our main thesis that the operation of election in genital tuberculosis is epididymectomy, including the accessible portion of the vas.

It has become a generally accepted doctrine when dealing with tuberculous processes elsewhere in the body that it is wise to remove by operation massive foci and to trust to the tissues the jugulation of the remaining tuberculosis. This principle applied to the urinary tract requires nephrectomy with removal of the accessible portion of the ureter, and it is generally recognized that the secondary processes in the remaining portion of the ureter and in the bladder heal in a majority of cases. Precisely the same principles should be applied to genital tuberculosis. The primary focus, the epididymis, should be dealt with radically. The secondary foci in the testicle may be dealt with locally and the secondary process in the prostate should be left to Nature. The last statement requires some explanation. If we advise dealing locally with the process in the testicle why not give the same advice in regard to the prostate? The difference depends on its anatomic location. To attack the tuberculous prostate is a radical procedure. The complete removal of the process when not under guidance of the eye is practically out of the question. We are far more likely to simply kick a hornet's nest and leave the patient worse off than when he started. In spite of some evidence to the contrary, we have been unwilling to attempt operative measures on the tuberculous prostate.

The management of the process in the testicle requires some further discussion. It has been our experience that the involvement of the testicle was in most cases contiguous to the process in the epididymis. Often only a small focus in one pole is to be found. When this is the case we have been satisfied to eradicate roughly with the curet and have never seen reason to regret it. It is clear that the testicle offers a very much higher resistance to the process than that offered by the epididymis. Cases will occasionally be seen, however, in which the involvement of the testicle is so considerable that it cannot be regarded as a harmless process; in these, though few, we must recommend orchidectomy.

We have held views somewhat at variance with generally accepted doctrines in regard to our duty toward the vas, and therefore feel required to give our reasons for the faith that is in us. We have insisted that it was desirable to remove the accessible portion of the vas for the reason that in years gone by we have too frequently seen recurrence in the stump of the vas when it was left in the neighborhood of the inguinal canal. Too often we have patients returned with scrotum perfectly healed and testicle apparently free from involvement, but with a troublesome mass in the groin or even a sinus, the healing of which required time, patience and tuberculin. We have therefore come to the opinion that the leaving of this portion of the vas complicates convalescence and may at times prove a serious annoyance. For these reasons we have recommended, and for five years one of us (H. C.) has practiced removal of the epididymis and removal of the vas up to a point at about the level of the brim of the true pelvis.

## OPERATIVE TECHNIC

The local preparation of the patient should involve the skin of the scrotum and the groin of the corresponding side if the disease is unilateral. An incision is made over the epididymis about 2 inches long. If sinuses are present they should be circumscribed by the incision. This is carried down to and opens the tunica vaginalis, which will in many cases be found adherent to the testicle and must be separated by dissection. The testicle and epididymis are delivered from the wound. The epididymis is then separated from the testicle by a scissor dissection, as in this way the vessels which lie behind the epididymis are less likely to be destroyed. The separation should be begun at the upper pole and carried downward, the epididymis being separated from within outward. When it is free the lower inch or two of the vas should be stripped up by blunt dissection from the structures of the cord. A curved clamp is then applied to the vas and the epididymis and the lower inch or two of the vas cut away. The vas is then stripped up by blunt dissection with the fingers so as to free it from the structures of the cord up to the external inguinal ring. Guided by the finger, the clamp on the lower end of the vas is then passed up to the external ring and carefully inserted into the canal, care being taken to avoid pushing it in front to the canal between the fascia and the fat. The clamp is then pushed upward and outward, following the line of the inguinal canal until its tip lies directly beneath the fascia at the level of the internal inguinal ring. The handle of the clamp is then strongly depressed, bringing the point snugly against the skin. An incision not over half an inch in length is then made on the point of the clamp, which is then pushed out through this incision carrying with it the distal end of the vas (Fig. 1). The vas is then picked up, and traction is made so as to pull out the portion lying in the canal so that the remaining portion dives vertically into the wound and over the brim of the pelvis. The finger is then inserted into the little wound, as shown in Figure 2, and the vas is freed as far as the finger can reach, making steady traction during this process. A right-angled clamp is then applied to the vas at the lowest accessible point. It is divided, cauterized with phenol (carbolic acid) and dropped back. The wound in the groin is closed with one catgut suture and the fascia with a silkworm-gut stitch in the skin. The operation is completed by the careful ligation of any bleeding points in the scrotum. Any apparent foci in the testicle are eradicated with a curet. The wound is painted with tincture of iodin and closed with a subcuticular suture of silkworm-gut, leaving a small protective tissue-drain at the lower angle. This drain has been found to shorten convalescence by giving free exit to the serum which necessarily oozes from the raw surface, the amount of which is considerably increased by the application of iodin. The dressing is held in place by the application of an Alexander bandage, one of the many devices of the late Samuel Alexander, which has been a boon to the genito-urinary surgeon. The drain can generally be removed in forty-eight hours and the patient may be up and about in two or three days. *The after-treatment should include* all of the general hygienic measures suitable for patients with tuberculosis, including the routine use of tuberculin and the routine use of sandalwood oil in cases in which there is involvement of the prostate.

The operation has seemed to us much superior to that involving a long incision through the scrotum and coverings of the inguinal canal in order to remove an equal amount of the vas. It takes less time in the doing, is equally efficient and shortens the convalescence about two-thirds.

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## ABSTRACT OF DISCUSSION

### ON PAPERS OF DRS. STOKES, LYONS AND CABOT AND BARNEY

Dr. Louis E. Schmidt, Chicago: I am not in complete sympathy with the technic of Dr. Cabot. About ten years ago we had a tendency to remove as much of the vas as possible. Of late years there has been, I believe, an opposite tendency, and I have simply removed the epididymis and a short portion of the vas, and treated the vas in exactly the same manner as the Mayos treat the ureter; they inject a certain quantity of phenol (carbolic acid) and tie it off, and then cleanse the wound with saline solution. That has given good results. Naturally, if there is a question of the involvement of the vas, if nodules can be felt all along its course, the question will arise as to how far you should remove the vas, whether or not it should be removed high up close to the internal ring in fact, if it is involved beyond that point, and particularly if the vesicles are involved, it is a question whether or not the removal of the vesicles should be undertaken. Formerly I was in the habit of removing them, and I have specimens to show both testicles removed. when they have been involved by tuberculosis, together with both cords and both seminal vesicles. They can be removed intact, that is, with an incision along the groin and then a perineal incision. So far as I am familiar with this topic at present, if the vesicles are involved, the prostate is also involved, and there is a greater tendency to leave these alone, particularly if the primary focus is in the epididymis; if the epididymis is removed there is a tendency to improvement, as in the kidney, and I think that we should leave the larger part of the ureter in rather than attempt to make a ureterectomy, even if we know that the ureter is involved.

Dr. Hugh Cabot, Boston: We have all seen patients known to have tumors in the scrotum who had been treated in some cases for months, and occasionally longer, under the belief that the change in the testicle might be due to syphilis. In that way I have, on at least two occasions, seen a tumor grow so rapidly that it was at least arguable that the patient's life was thrown away, and I do not believe that in the present state of our knowledge we are justified in observing these cases of unknown tumors involving the testicle. The Wassermann reaction may often exist, but assuming the Wassermann reaction to be negative, assuming that there is still doubt in our minds as to the possibility of the change in the testicle being gummatous, it is our duty to give the patient the benefit of the doubt and operate, and not sit back and make an attempt to cure him with antisyphilitic treatment. We shall probably never succeed in convincing the average practitioner of the truth of that statement. We must recognize the extreme malignancy of these tumors, the fact that, as we have been in the habit of managing them, the vast majority are not benefited by operation, that these patients die of involvement of the lymph-nodes, and that it is abundantly clear that we have not seen these cases early enough to be of substantial value to the patient. The remedy for that consists in enforcing the view that exploration in these cases is the method of giving the patient the benefit of the doubt and that the doubt should be removed by seeing exactly what is going on there.

I am not quite in agreement with Dr. Stokes in regard to what constitutes radical operation in these cases, because it must be remembered that the lymphatics of the testicle follow, at least to a considerable extent, the spermatic vessels, that the lymph-nodes in which metastasis takes place are those lying immediately below the kidney. If we are to make any considerable attempt at eradicating the glandular involvement we must make an incision which exposes the kidney. It has never seemed to me that this was worth while. I do not believe it to be possible to remove those glands in a way to be of benefit to the patient. The removal of the testicle, with the cord, at a point high up in the inguinal canal, is as much as we can do with advantage.

Dr. Arthur Dean Bevan, Chicago: In discussing any case of tuberculosis one should remember that almost all of these cases are secondary. Tuberculosis of the epididymis is a secondary affair almost invariably, just as is tuberculosis of the kidney in a certain sense, in that they are hematogenous infections and that there is almost invariably some primary lymphatic tuberculosis or tonsillar tuberculosis in the body; when you handle a case of surgical tuberculosis, whether of the urinary tract or of the genital tract, you are not removing anything except the grossly involved structures no matter how radically you operate. If one carries that in mind I think one must necessarily come to this conclusion, just as general surgeons do in handling tuberculosis of any part of the body, that in case you can remove a tuberculous focus, the overshadowing focus, by an operation that is justifiable and easily borne by the patient, it is a proper thing to do, because the patient then has a much better chance of cleaning up the remnants of the tuberculous process that always remain.

In genital tuberculosis the proper thing to do in the great majority of cases would be a simple operation; removal of the epididymis and that part of the vas that is also grossly involved. I hardly think that it is good routine to follow the vas down to the brim of the pelvis, unless the vas is greatly involved, and if it is involved so far down as that, one may be pretty sure that the seminal vesicles and prostate are also involved. If a minor operation, without any hardship to the patient, would clear up the focus, that should be done. When that is done, the patient should be given the general hygienic treatment that is given in cases of lung tuberculosis, and possibly, of course, tuberculin.

I never have cured permanently a single patient with malignant tumor of the testicle. If you have a suspicious tumor of the testicle and you do not know whether it is malignant or not, there is just one thing to do, and that is to make an exploratory incision. I have found that some of the growths that I supposed were malignant were nothing more than compound hydroceles with thick walls. I have found some of them to be gummas. The possibility of permanent cure in malignant disease of the testicle is so small that we are not warranted in removing suspicious tumors which may be benign. There is little danger in making an exploratory operation in malignant tumors. It is perfectly rational and scientific to take out a section of tissue, examine it with the greatest care, and then, if it is malignant, do a radical operation.

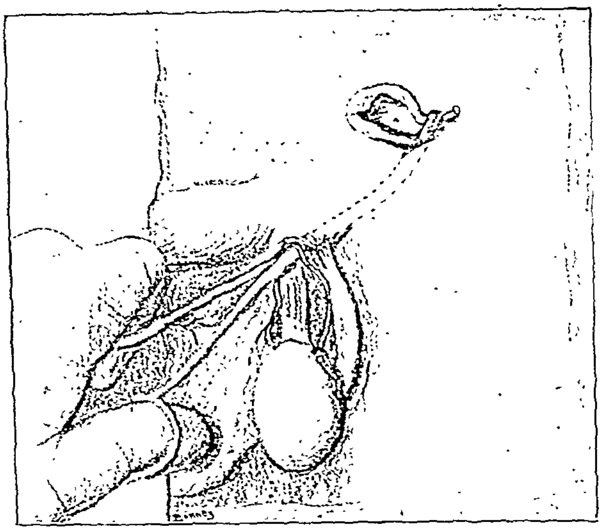

Fig. 1.—Vas held in curved clamp which has been passed up into the inguinal canal and is making its exit through a small incision opposite the internal inguinal ring.

**Dr. V. D. Lespinasse**, Chicago: I am heartily in accord with the operative technic which Dr. Cabot has described. I only wish to call attention to some of its difficulties. The first one of these is hemorrhage. I have had one or two cases in which it has been rather difficult to stop the hemorrhage from the testicle after the epididymis has been removed. Hemostasis must be done with a great deal of care, and it has been my practice, after I have stopped the bleeding, to put on a compression bandage at once. I should like to ask Dr. Cabot if, after treating the vas as he does and cutting it off down in the pelvis, he has ever had a transference to the pelvis of the mass that we sometimes get in the groin? It seems to me that this mass might possibly occur there and cause more trouble than if it occurred in the scrotum. It has been my practice to cut the vas off and inject it with phenol (carbolic acid).

**Dr. Hugh H. Young**, Baltimore: These tumors certainly are the most remarkable and bizarre type of tumors that we have. It seems to me that early operation is unquestionably the thing. I can remember a number of patients who have been treated unsuccessfully with iodid of potassium for months, and ultimately have come for operation when it was too late. It has been my habit to attack these tumors from above, that is, going in on the cord and dividing the veins and other structures of the cord high up, before there is any traumatism of the testicle, from which the veins might become infected, causing metastasis. In many cases of malignant disease it is important to get above the disease in order to prevent metastasis from traumatism and pressure at operation.

Dr. Cabot brought up a subject that has not been dealt with in a comprehensive way for several years. It seems that tuberculosis of the globus major of the epididymis is almost always primary and probably comes through the venous supply. The involvement of the second side generally occurs, just as a gonococcus infection occurs, in the globus minor, sometimes as a fulminating inflammation, with much pain, swelling, redness and tenderness, simulating a severe gonorrheal infection. It would seem to me, therefore, that, in some cases at least, when the second side becomes involved the disease has traveled up and involved the prostate and seminal vesicles and then gone down through the vas, involving the second side, just as the gonococcus does. Undoubtedly epididymectomy is the operation of choice and every effort should be made to preserve at least a portion of one testicle.

I had one case eight years ago in which I followed the vas far up into the groin and divided it at the pelvic brim. The patient had a tuberculous peritonitis afterward. That case has rather deterred me from following the vas so far. I usually follow the vas up to the groin and then inject iodoformized oil. It is generally possible to get from 15 to 20 c.c. of oil down into the vas deferens, and probably to fill the seminal vesicle and the posterior urethra with it. This method has been used in our clinic for years with good results. The trouble with the earlier operation was that it was too radical. The trouble with the operation through the perineum was that the urethra was invaded and a urinary fistula remained. I believe that if we do come to an operative treatment of these severe cases of tuberculosis of the prostate and seminal vesicles, it will be an operation possibly removing more or less completely the tuberculous seminal vesicles and the lateral lobes of the prostate, but not penetrating the urinary tract.

**Dr. S. A. Mahoney**, Holyoke, Mass.: Relative to Dr. Cabot's trouble in the region of the external inguinal ring when he has simply divided the vas deferens at the opening, I have had that same experience in a small number of cases. Patients have returned to me from one to two months after the scrotum and testicle have healed perfectly with a disagreeable swelling and inflammation in the region of the external ring.

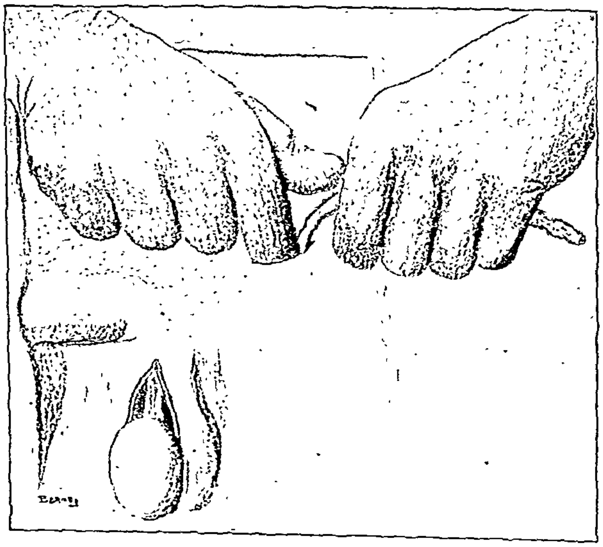

Fig. 2.—Tension is made on the vas by the operator's left hand, while with his right index-finger in the inguinal incision he frees the vas over the pelvic brim.

**Dr. A. C. Stokes**, Omaha: It is practically impossible to make a clinical diagnosis of tumor of the testicle. The trouble has been to differentiate tumors from gummas, as Dr. Cabot has brought out.

On account of metastasis, I am inclined to believe with Dr. Bloodgood and others that exploratory incision into malignant tumors is not a good thing, especially in the testicle.

Metastasis often follows rapidly on an incision. It seems best to open the scrotum and then, if we should find an infiltrated hydrocele, the procedure is simple, but if we think that the growth is malignant we can make a frozen section and determine its nature at once: if it is malignant, we must take out all the glands as far as possible retroperitoneally.

Dr. Hugh Cabot, Boston: In regard to the management of the vas the point to be remembered is that the involvement of the vesicle and the prostate bears no relation whatever to the involvement of the vas. The process does not reach the vesicle and prostate by continuity, but, as I believe, by the lymphatics. It is not easy to determine the amount of involvement of the vas. You will often find nodules separated by two or three inches. The infection has stopped at certain places along the lymphatics and invaded the vas. I have been disagreeably surprised to find little nodules along the vas far above the point I had suspected, and it has seemed to me that the removal of the accessible portions of the vas is important. I doubt whether the injection of any substance through the vas has any particular effect on tuberculosis of the vesicle, because the process is not in the lumen but in the wall. The vesicle is involved from without, not from within. Certain it is that the removal of the vas in this way—we have been doing it for years—has left the patients much more comfortable, and I must see something other than theoretic reasons for changing my views.

The involvement of the second side is an interesting problem. I do not believe that there is any reason for regarding it as an involvement by continuity. I believe that the process reaches the prostate and the vesicle by the lymphatics, and that it reaches the second epididymis by the lymphatics or by the blood-stream. I do not believe that it walks up one side and down the other any more than I believe that this is the common method of transference of the gonococcus. We want to remember that Keyes' statistics and other large statistics, including a series of one hundred cases by Dr. Barney, show that involvement of the second side must be expected in 50 per cent. of the cases within two years. This might as well be taken into consideration from the first.

It has seemed clear that the leaving of the testicle is important. The testicle is valuable for three reasons: In the first place, it forms spermatozoa. We must recognize at once that those patients with involvement of one epididymis in tuberculosis are sterile as demonstrated by Keyes, Barney and by foreign observers, so that, so far as the spermatogenic function is concerned, we may drop it; but nobody to-day, I think, doubts the presence and the value of the internal secretion of the testicle. The third factor in regard to the testicle is its psychic value to the patient, apart from the internal secretion. The average man is much interested in his testicle, and for what seems to me perfectly sufficient reasons. Now what is the logic of the old method of orchidectomy? If you begin by taking out the first testicle, the patient is liable to put a hard problem up to you or somebody else by coming around with the other testicle involved so that you ought to take that out, and then he refuses to have it done. The logical thing is to leave what is there accessible, not seriously damaged, and take your chances on the other side.

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Dust.—There is no substance on the face of the earth which does not enter into the composition of dust. In the home there are particles of furniture, clothing, foodstuffs, animal and vegetable matter, bacteria, particles of wall-papers, plaster, iron and other metals, carpets, rugs, books and everything in the process of nature's decay contributing its quota of dust. In the street all the foregoing are in evidence in the dust, also particles of steel and iron from the wearing of wagon-wheels and horseshoes, gold, sand, stone, hair, excreta, clay, minerals of every kind, bacteria, leather skins, plant life, animal life of many kinds—in fact, there is nothing imaginable which does not contribute to the dust of the earth, and many thousands of dust particles may be found in every cubic inch of the air we breath.—*Bull. Winnipeg Dept. Health.*

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# CHRONIC STENOSING GASTRITIS *

HORACE W. SOPER, M.D.

ST. LOUIS

Chronic stenosing gastritis was recognized and described by both Andral[1] and Cruveilhier[2] in 1829. Since that date much discussion has ensued among pathologists as to the nature of the process, some maintaining that it is always a malignant or cancerous condition, others that a benign inflammatory stenosis may occur. Among the synonyms found are "chronic interstitial gastritis," "sclerosis of the stomach," fibroid induration," "hypertrophic stenosis of the pylorus," "cirhosis of the stomach" or "linitis plastica." The term "Schrumpfmagen" has been most commonly employed in Germany. Von Sury[3] distinguishes two forms, a carcinomatous and a simple inflammatory type. He defines the latter as a primary increase in the thickness of the stomach wall, produced by a connective-tissue hyperplasia involving the submucosa and subserosa, the capacity of the stomach being diminished by a secondary contraction of the newly formed connective tissue. In a very exhaustive and critical review of the literature, he concludes that the etiologic factors involved in the simple inflammatory type are round ulcer, gastritis phlegmonosa, chronic gastritis, chemical irritants, syphilis, polyserositis occurring in passive congestion in diseases of the liver, heart and lungs, chronic peritonitis, primary *Zuckergussleber* of Curschmann, and trauma.

Congenital hypertrophic pyloric stenosis is not considered here, inasmuch as this condition appears to have no relationship to the etiology of the benign stenosis occurring in adults.

While one cannot deny that the before-mentioned etiologic factors can result in the pathologic process known as simple inflammatory contracted stomach, or *Schrumpfmagen*, nevertheless for clinical reasons it would seem best to restrict the term "chronic stenosing gastritis" to those cases in which a long-continued gastritis has been the causal factor. I shall therefore consider only this simple form, in which the stomach alone is involved. A few have combated this view, notably Charles F. Martin,[4] who takes the position that chronic gastritis has no etiologic relationship to simple contracted stomach. He agrees with Brinton and terms the process linitis plastica, or cirrhosis of the stomach. He considers it due to an overgrowth of connective tissue, such as may occur in any part of the body, caused by unknown irritants.

Von Sury shows that all the careful modern histologic studies of cases reveal the fact that the mucosa as well as the submucosa and subserosa is involved in the inflammatory process, and that pathologically it must be considered as a true gastritis. He particularly emphasizes that the passive congestion occurring in heart failure is a distinct etiologic factor in producing a polyserositis involving the stomach and other abdominal organs, and that Curschmann's *Zuckergussleber* is allied to this process. It is clear that clinically we may exclude cases of this class as well as general chronic hyperplastic peritonitis. Hemmeter refers to the confusion existing in the literature and points out that many cases of ulcer cicatrices have been reported under the term chronic stenosing gastritis. It is obvious that trauma cannot be considered as an etiologic agent.

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* Read before the American Gastro-Enterological Association, Washington, D. C., May 6, 1913.

[1] Andral: Précis d'anatomie pathologique, Brussels, 1829, ii, Part i, p. 46.

[2] Cruveilhier: Anatomie pathologique du corps humain, 1829-1835, ii. Books 12 and 27.

[3] Von Sury, Kurt: Beitrag zur Kentniss der totalen, einfach entzündlichen Magenschrumpfung und der fibrösen Polyserositas (Zuckerguss), Arch. f. Verdauungskr., 1904, xiii, No. 1, p. 1.

[4] Martin, Charles F.: Osler's Modern Medicine, p. 311.

The cases of Hemmeter and Stokes,[5] Einhorn,[6] Reignier,[7] Gross[8] and others make it clear that syphilis may produce contraction and stenosis of the stomach, which is extremely difficult to differentiate from the condition caused by chronic gastritis. It is probably better, however, to consider this form as only one of the several manifestations of gastric syphilis.

Primary chronic stenosing gastritis, therefore, always results from a long-continued, chronic inflammation. The hyperplasia affects chiefly the pyloric half of the stomach and ultimately results in a diminution in the lumen as well as a narrowing of the pylorus.

The symptomatology is that usually observed in the progress of an ordinary chronic gastritis, except that signs of stenosis gradually appear. In late cases, hydrochloric acid is absent and lactic acid and Oppler-Boas bacilli are often present. Nothnagel mentions that a smooth indistinct resistance may often be palpated. The differentiation from diffuse scirrhus carcinoma may be difficult, as both may give the same stomach content findings. Occult blood is often absent in this type of carcinoma, as well as in chronic stenosing gastritis. The anamnesis and the course of the disease are the determining factors. Recently S. Jonas[9] has asserted that the Roentgen ray will show an insufficient or gaping pylorus in diffuse scirrhus carcinoma.

The stenosis caused by ulcer scar is totally different in clinical manifestations. The presence of hydrochloric acid in the fasting stomach should alone be sufficient to differentiate.

In the vast majority of cases, the diagnosis has been made at necropsy. Even here, difficulties are encountered. Von Sury demonstrates that the endothelial cells of the lymph vessels may assume a peculiar cuboidal form which closely resembles epithelial cells. On the other hand, the epithelial cells may be so few in number as to escape detection in true diffuse carcinoma.

Excluding syphilis and doubtful cases, such as ulcer scar, diffuse carcinoma, etc., the writer limits the number of genuine cases of chronic stenosing gastritis to twenty-nine.

Tilger[10] tabulates twenty-three cases; of this number, four occurred between the ages of 20 to 30, seven between 30 and 40, six between 40 and 50, two between 50 and 60, two between 60 and 70 and two over 70. Boas'[11] three patients were aged 32, 43 and 47, Hemmeter's[12] four patients 23, 28, 36 and 38 years.

### REPORT OF CASE

*Patient.*—A farmer, aged 36, good family history, came under my observation in April, 1910. He had an attack of acute articular rheumatism at age of 14. He uses no tobacco, but had been a steady moderate drinker since the age of 20, averaging three glasses of whisky a day. During the past year he had abstained entirely from alcohol. No history of syphilis. His stomach trouble began twelve years ago; at first, only discomfort and eructations of gas after eating; eventually, nausea and vomiting appeared; never any pain. These symptoms with the usual remissions and exacerbations have persisted since. Six years ago a test-breakfast was given and he was told that he had no hydrochloric acid in the stomach contents. For the past year his appetite has failed, and he has been obliged to resort to liquid and semisolid foods in small quantities. Solid foods as well as large quantities of liquids always produce nausea and vomiting. His strength has failed and he is no longer able to do his work.

*Examination.*—He is a sparely built man, 5 feet 9½ inches in height, weight 117 pounds. Maximum weight twelve years ago, 135 pounds. He is somewhat anemic looking. Chest reveals nothing abnormal. Abdomen, rather narrow epigastric angle, very little fat, strong musculature. The entire epigastrium is tender to pressure. Tendon reflexes normal. Pupils respond well to light and accommodation. A Ewald-Boas test-breakfast, 60 c.c. Chyme, bad. Much stomach mucus. No hydrochloric acid. Total acidity 8. No rennin, no lactic acid, no long bacilli. Fasting stomach contents, 30 c.c. of yellow turbid liquid; no fetor; no food residue; no hydrochloric or lactic acid. Microscopically there are many pus-cells and squamous epithelial cells. The feces on vegetable diet show no occult blood. Schmidt's test-diet shows a good utilization of the starches, fats and proteins. Blood: Hemoglobin 60 per cent. No leukocytosis. Red-cells 3,500,000, well filled. No poikilocytosis. Wassermann reaction negative.

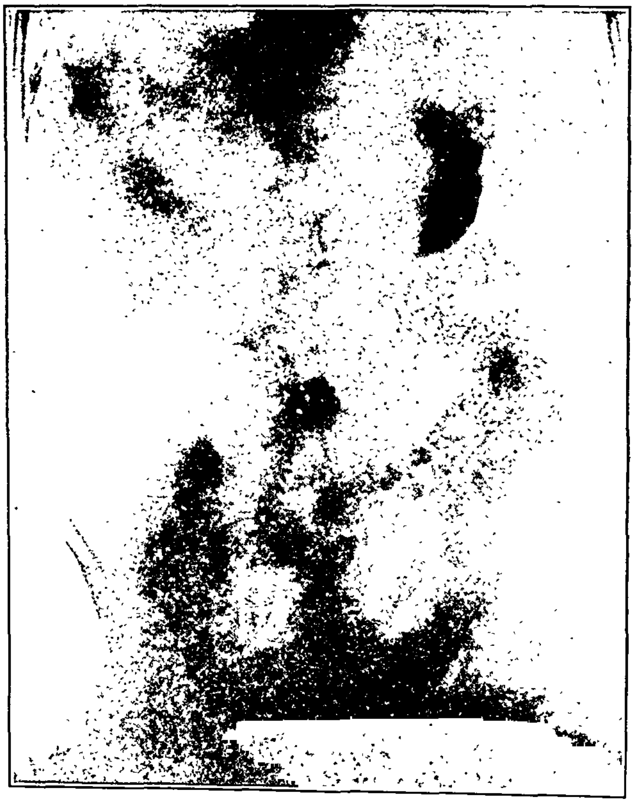

Fig. 1.—View of gastro-intestinal tract, taken immediately after the ingestion of 500 c.c. of bismuth and fermented milk. Note the extensive dissemination in the small intestine. This and the following radiograph were taken by Dr. R. D. Carman.

Urinalysis: The urine is scanty, but otherwise normal.

*Treatment.*—He was dieted carefully, but grew progressively worse and was confined to bed. Even liquid foods in small quantities were vomited. In June, pyloric stenosis was suspected as the fasting stomach showed small quantities of stagnating food remnants. Lavage produced considerable relief. Roentgenograms could not be procured as the patient could not retain the bismuth meal. In July his weight was reduced to 102 pounds. Lactic acid and Oppler-Boas bacilli were frequently found in the stomach contents. The pus increased in quantity. The glycyltryptophan test was negative. Hemoglobin 35 per cent. The blood-smear showed no signs of pernicious anemia.

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[5] Hemmeter and Stokes: Chronische hypertrophische Gastritis syphilitischen Ursprungs, etc., Arch. f. Verdauungskr., 1901, vii, s. 313.

[6] Einhorn, M.: Ueber Syphilis des Magens, Arch. f. Verdauungskr., 1900, vi, s. 150.

[7] Reignier: Cited by Von Sury: Syphilitische und alkoholische sklerose, augehend vom obersten Teil des Dunndarms mit vorschluss der Lichtung, Jour. de méd. de Paris, 1898.

[8] Gross, H.: Die syphilitische fibröse Magen und Darmstriktur, München. med. Wchnschr. 1903, No. 4.

[9] Jonas, S.: Zur Diagnostik des Schrumpfmagen, Wien. med. Wchnschr. 1909, No. 5, s. 262.

[10] Tilger, A.: Ueber die stenosierende Pylorushypertrophie, Virchows Arch. f. path. Anat., 1893, cxxxii, s. 290.

[11] Boas: Ueber hypertrophische Pylorusstenose (stenosierende Gastritis) und denen Behandlung, Arch. f. Verdauungskr. 1898, iv, s. 47.

[12] Hemmeter, J. C.: Diseases of the Stomach. 1911, p. 613.

August 3: Operation by Dr. Willard Bartlett. The stomach was found to be small and presented a peculiar feeling of resistance. The serosa was thin and smooth, the pyloric region was particularly hard but was smooth and uniform. Anterior gastrojejunostomy was done. The stomach wall was ½ inch in thickness and was difficult to cut through. The incised surface presented a white, almost cartilaginous appearance. The mucosa was thin and anemic looking. The pylorus would not admit the end of the finger. Considerable difficulty was experienced in applying the sutures because of the toughness of the stomach wall. The patient made a good recovery.

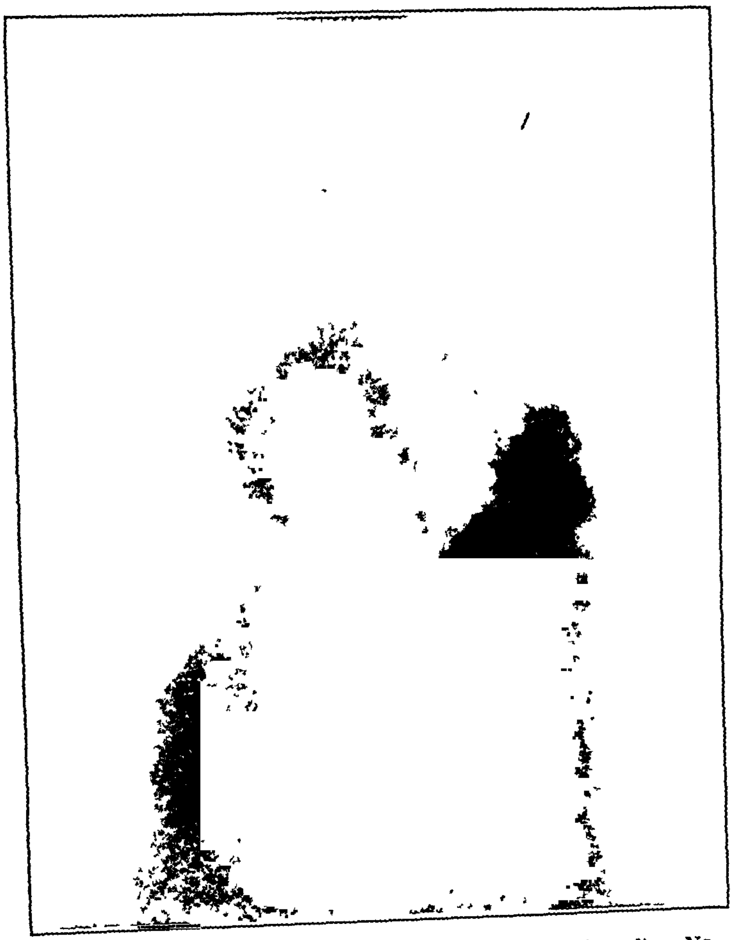


Fig 2.—Same subject: picture taken immediately after No. 1. Very little of the bismuth mixture remains in the stomach

Sept. 9, 1910: Weight, 111 pounds. Able to take liquid food without discomfort, no more than 4 ounces at a feeding. Roentgen fluoroscopy: The stomach is small, the bismuth and fermented milk mixture is swallowed slowly and passes at once out of the gastro-enterostomy stoma, so that it is impossible to obtain a view of the stomach contour.

Dec. 20, 1910: Improvement continued, weight 125 pounds. The patient is able to take semisolids and 8 ounces of liquids at a feeding. Fasting stomach contents, 20 c.c. bile colored liquid, no food residue, no hydrochloric or lactic acid, no pus cells, no long bacilli.

June 13, 1911: Weight 130 pounds. Patient takes larger quantities of foods, but cannot tolerate meats. Test breakfast. 40 c.c. Chyme bad, much stomach mucus, slightly tinged with bile, no hydrochloric or lactic acid, no long bacilli. Fasting stomach contents, 15 c.c. bile-colored liquid, no hydrochloric acid, no food residue, no pus.

September, 1912: Weight 130 pounds. Stomach content findings same as last time. Hemoglobin 75 per cent. Roentgen fluoroscopy reveals stomach dimensions after rapidly drinking 1 pint of the bismuth suspension to be: length from cardia to lower pole 6 inches; width near cardia, 3 inches; width near pylorus, 1 inch. The food passes very rapidly out of the gastro-intestinal stoma without any intermittence. Very small masses pass intermittently out of the pylorus. There is no peristaltic wave visible; the stomach moves up and down when food is introduced, making an excursion of about 1 inch, not synchronous with respiration. The roentgenograms were taken as rapidly as possible, Figure 1 immediately after the bismuth suspension was drunk, and Figure 2 as soon as a second plate could be put in position.

The rapid dissemination of the bismuth in the small intestine is clearly shown. This is probably due to the gaping of the incision in the thick wall of the stomach.

The patient continues in excellent health, and considering the history of the case and the course of the disease subsequent to the operation, the possibility of carcinoma is probably not to be considered now.

The roentgenograms were taken by Dr. R. D. Carman.

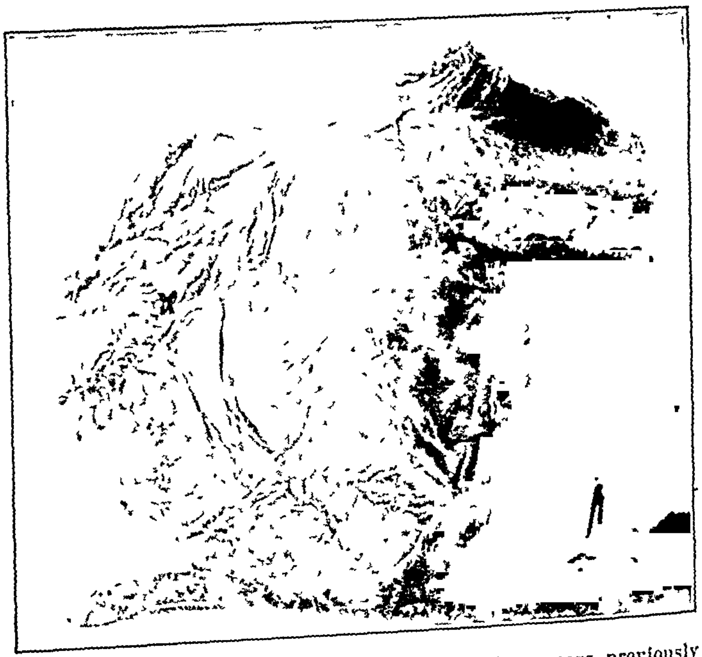
625-632 Metropolitan Building.

## BLADDER SUTURE FOUR YEARS AFTER OPERATION

James R. Judd, M.D., Honolulu, T. H.

About three years ago[1] I described a case of intraperitoneal rupture of the urinary bladder in which operation was performed seventy-seven hours after the receipt of injury. The patient made a good recovery and was entirely free from any bladder symptoms subsequently.

Four years after the operation the man died of pneumonia and the bladder was removed at the post-mortem examination. There were no adhesions along the suture line. The scar of the rupture is represented by a thin line 2¼ inches in length. At the time of the operation the rent easily admitted four fingers. An additional point of interest is the fact that a careful search failed to reveal any trace of the continuous silk suture used at the operation.



Bladder, showing scar of operation done four years previously for intraperitoneal rupture. The scar extends from points x to x.

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[1] Judd, J. R.: Rupture of the Urinary Bladder Operated on Seventy Seven Hours after Injury, The Journal A. M. A., April 9, 1910, p. 1207.

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**Coal-Mine Accidents.**—The risk of coal mining is greatest during the winter months, when the liability of serious mine explosions is increased by the drying of the mines through the entrance of air below the temperature of the workings. —Horton, *Bull. Bureau of Mines.*

## A CASE OF DISLOCATION OF PROXIMAL PHALANX OF GREAT TOE

P. G. Skillern, Jr., M.D., Philadelphia

P. W., male, white, laborer, aged 56, reported at the surgical outpatient department of the University Hospital, service of Dr. B. A. Thomas, May 28, 1913, with the history of having been kicked by a horse nine weeks previously, and of having been treated at another hospital for an injury to the left knee. He now complains of pain in great toe. Examination reveals fixation of great toe in extreme extension and crepitation at metatarsophalangeal joint. The roentgenogram (Fig. 1) shows displacement of proximal phalanx of hallux onto the dorsum of the head of its metatarsal. The anteroposterior view (Fig. 2) is of interest in showing concomitant displacement of the sesamoids from the plantar aspect to each side of the joint. Under nitrous oxid reduction was attempted by means of Levis' apparatus, but owing to lacerations of the skin this method was abandoned. A trial was next made of the method proposed by Dr. Crosby of New Hampshire in 1826, for reducing dislocations of the thumb, which was so well spoken of by the elder Gross. The toe was raised perpendicularly and strong pressure applied against the base of the phalanx, so as to push it from behind forward and from above downward. Reduction was maintained by strapping the hallux down on a plantar splint, which was applied after the method described by Cotton.

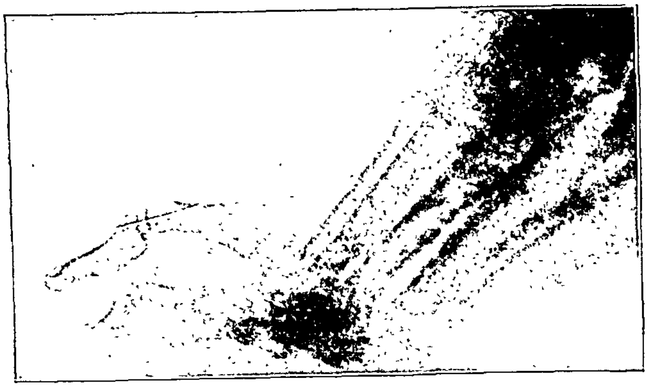

Fig. 1.—Base of proximal phalanx of great toe resting on dorsum of head of first metatarsal. Note plane occupied by sesamoid. Lateral view.

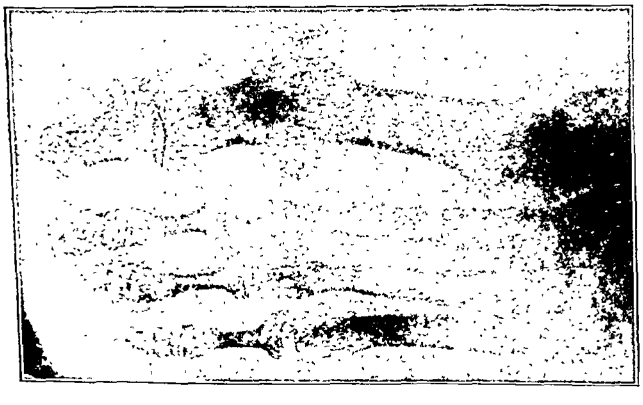

Fig. 2.—Note shortening of hallux and diastasis of sesamoids so as to embrace the joint. Anteroposterior view.

This injury was evidently overlooked at the other hospital, and the deformity must have been greatly increased during the intervening nine weeks by contraction of the extensor hallucis proprius.

That the injury is rare is attested by the statement of Dr. Henry K. Pancoast, who took the roentgenogram, and also by the fact that Gross[1] had seen but two cases. Of twenty-two cases of luxation of the proximal phalanges of the toes Malgaigne states that nineteen were of the great toe. In Holmes' "System of Surgery,"[2] the analogy between this luxation and that of the corresponding phalanx of the thumb is pointed out, as well as a similar difficulty in reduction. In four out of ten cases noted by Malgaigne[3] the reduction could not be accomplished. In accounting for this difficulty of reduction it is of interest in connection with our case to note the statement of Gross[1] that "it depends probably on the manner in which the adductor muscle and the sesamoid bones are dragged by the displaced phalanx backward over the extremity of the metatarsal." The roentgenograms, especially Figure 2, show clearly the relative positions of the sesamoids, and that they in no way interfere with reduction, not in my case at least.

241 South Thirteenth Street.

## CASE OF FOREIGN BODY IN THE RECTUM

Frank M. Conlin, M.D., Omaha

On the morning of Aug. 11, 1913, I was called by the proprietor of a hotel to see one of his employees, a dishwasher, who, he said, had been sick since the day before. The patient, a Dane, aged 68, stated that he had fallen on a cup about two weeks before and cut himself. He complained of severe pain in the left iliac and hypogastric region. He gave no history of vomiting, but stated that his bowels had moved the day before and that he had urinated that morning. His temperature was 99 and his pulse 80. There was blood on the bed. Examination showed a mass in the left iliac region.

I took him to the hospital, and on further examination found blood coming from the rectum, and a deep laceration through the mucous membrane and the sphincter muscle in its posterior aspect. Examination under anesthesia disclosed a china cup in two pieces, the smaller piece being about one-third of the side of the cup.

The cup, being firmly held with a pair of pliers, was broken into eight pieces with short quick raps of the hammer on a cold-chisel, and the pieces removed.

I irrigated the area with normal salt solution and could find no perforations. Examination of the cut surface of the sphincter showed an old wound covered with granulations, the bottom made up of fibrous tissue. The sphincter muscle and mucous membrane were sewed later. The man made an uneventful recovery, leaving the hospital in nine days, seemingly with good control of the sphincter. I am convinced that the patient had been accustomed to putting foreign bodies in the rectum for some time to satisfy an abnormal sexual appetite, and that at this time he inserted the cup, when, on account of the spasm of the sphincter at the time of the orgasm, the cup was forced up inside. He evidently had made an attempt to remove it afterward, which would account for its being broken.

The cup, a thick one without handles, measured 82.5 mm. (3¼ inches) in height, 90.5 mm. (3 9/16 inches) in diameter across the top, 51 mm. (2 inches) across the bottom and 1 cm. (6/16 inch) thick.

Kelsey mentions a specimen in the Museum of Anatomy and Pathology in Copenhagen, which was introduced by a patient in an attempt to prevent a prolapsus. It is a long, oval, flat stone about 6¾ inches long, 2½ inches wide, 1½ inches thick and weighs nearly 2 pounds. The stone was extracted by a surgeon, Frantz Dyhr, in 1756.

In the Surgical History of the War of the Rebellion, II, p. 322, there is mentioned an operation performed on a sailor who had introduced into the rectum a stone 5½ inches long by 3 inches wide. The colon was perforated, and the stone was removed from the peritoneal cavity by an incision near the umbilicus.

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1. Gross: System of Surgery, 1882, i, 1162.
2. Holmes: System of Surgery, 1881, i, 989.
3. Malgaigne: Agnew's Surgery, 1881, ii, 126.

# *New Instruments and Suggestions*

## NEW KIDNEY FORCEPS

Ferdinand C. Walsh, M.D., San Antonio, Tex.

Those doing kidney work are well aware of the difficulty frequently encountered in the delivery of the kidney preliminary to nephrotomy, nephrectomy or operative procedure on the pelvis or upper portion of the ureter. Tardy delivery is often the main factor in prolonging an operation which otherwise would occupy but a few minutes.

So far as I am aware, all forms of kidney forceps now on the market, when fitted to the kidney, possess the drawback of exerting undue pressure on the renal substance, thereby frequently causing irreparable damage to the organ, or through hemorrhage, from tearing the friable kidney substance, causing the operator much annoyance and extra repair work.

The forceps which I devised, and which I have found serviceable in overcoming those difficulties, as will be seen from the accompanying illustrations, is of a modified obstetric pattern, fitted with a Hodge lock. The opening between the tips of the blades allows a firm grasp of the kidney with non-interference from the pedicle which rides free between. In delivering the kidney, the traction exerted in no way causes compression of the kidney substance, as the blades lock loosely over the kidney, and all force is directed from above downward on the pedicle itself. When the kidney has been exposed, after stripping off its fatty capsule, the anterior blade is first introduced, in order that no damage may be done to the peritoneum. With a finger behind the kidney to locate the pedicle, the blade is carefully put in position, the pedicle being allowed to slip between its tips. The opposing blade is placed in a like manner behind. With the blades locked, gentle traction is made, and in this manner adhesions become taut, and may easily be stripped, or, if deemed expedient, ligated and cut. After delivery, should it be desired to do a nephrotomy or pyelotomy, the handle of the forceps is turned directly backward, the upper blade removed and the lower blade thrust forward, thus allowing the kidney to ride free above the incision, the blades projecting well beyond both edges of the wound, preventing the organ from dropping back into the cavity.

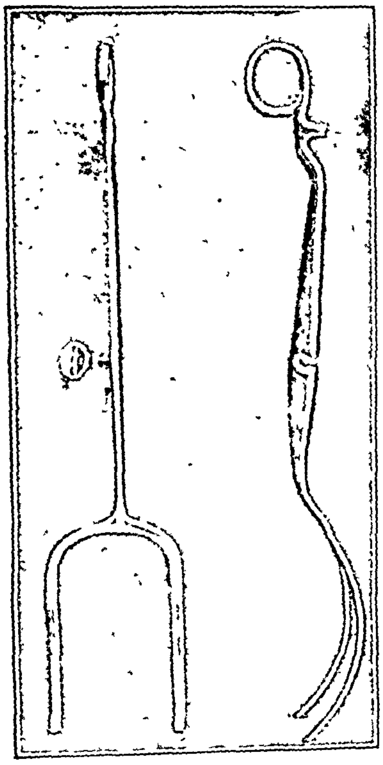

Fig. 1.—Walsh kidney forceps; posterior and side view.

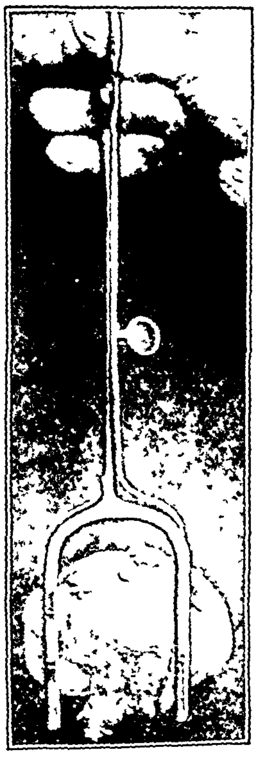

Fig. 2.—Walsh forceps in position on kidney. Note wide space between tines.

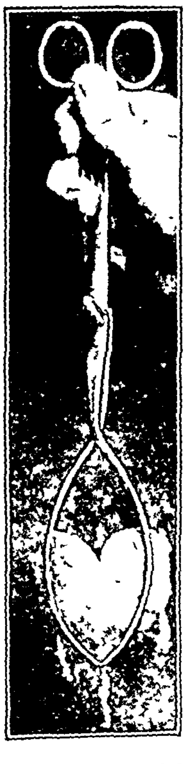

Fig. 3.—Walsh forceps on kidney; side view.

The width between the tines for the reception of the pedicle is 1⅝ inches. The convex blades fully closed measure in their long axis 4½ inches, while the transverse diameter is 2 inches. The kidney used in the illustration is an unusually small one.

Moore Building.

## A SIMPLIFIED COLORIMETER

### SPECIALLY ADAPTED FOR TESTING THE EXCRETION OF PHENOLSULPHONEPHTHALEIN IN THE FUNCTIONAL KIDNEY TEST *

James I. Armstrong, M.D., Pittsburgh, Pa.

Finding the less expensive colorimeters in general use for the kidney functional test (as popularized by Rowntree and Geraghty) rather unsatisfactory, I devised the instrument here described. Figure 1 shows the colorimeter closed, with an opening in the anterior surface giving a view of the bottles in position. Figure 2 shows the two compartments with closed sides and posterior surface of opal glass. A two-candlepower frosted globe is used for illumination.

The standard solution is made by diluting 6 mg. of phenolsulphonephthalein with 1 liter of distilled water and adding sufficient 25 per cent. sodium hydroxid solution to elicit the maximum color. The small bottle is filled with the standard solution, hermetically sealed and labeled 100 per cent. Serial dilutions are now made of 95, 90, 85 per cent., etc. The bottles are to be kept in a dark case and refilled when necessary. The test is carried on in the usual manner. The urine is diluted to 1 liter with distilled water, to which a 25 per cent. solution of sodium hydroxid is added to give a maximum color reaction, and a small quantity filtered. A bottle of this filtrate the same size as that of the standard solution is placed in one compartment, and the standard solution which matches this in the other compartment and the percentage excreted, read directly.

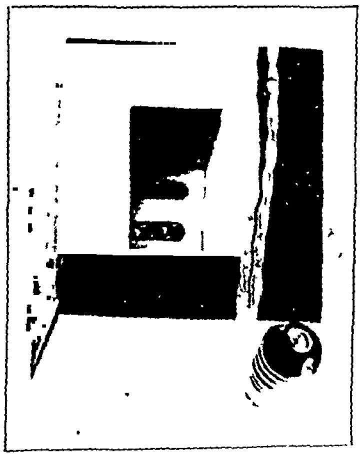

Fig. 1.—Colorimeter closed, showing bottles from anterior.

The advantages which this colorimeter has over others are: (1) its accuracy, simplicity and cheapness; (2) its uniform light at all times, (3) and the ease with which it can be carried in case of emergency.

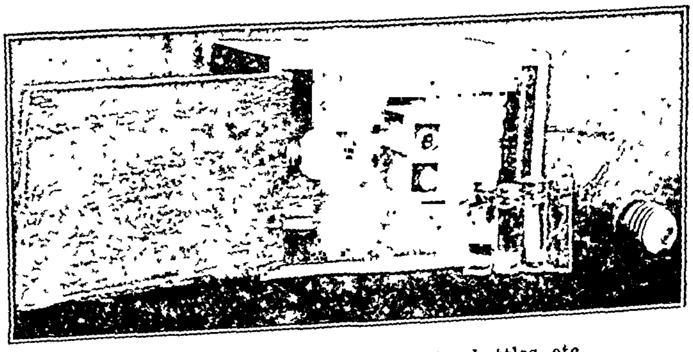

Fig. 2.—Bottles in position, extra bottles, etc.

The instrument can also be used for colorimetric determination of indican, creatinin, etc.

I wish to thank Dr. Fisher, who made the pictures for me.

476 South Rebecca Street.

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* From the Laboratories of the Western Pennsylvania Hospital, Pittsburgh, Pa.

## SOME INEXPENSIVE EQUIPMENT FOR THE PHYSIOLOGIC LABORATORY*

Clayton McPeek, M.D., Columbus, Ohio

Many instruments for the work in experimental physiology can be made in the laboratory at little cost. These pieces are sometimes more desirable than factory-purchased supplies and are an especial boon to schools with limited means.

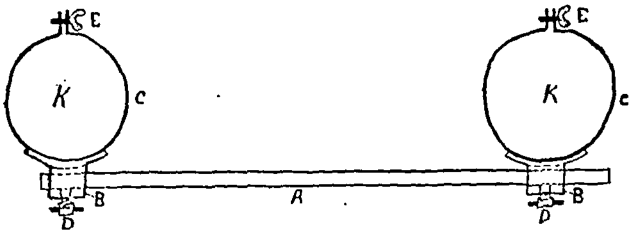


Fig. 1.—*A*, a steel bar ⅝ inch square and 4 feet long which passes through *B,B*; B,B, cast-iron pieces 1½ inches square posteriorly, with concave anterior surfaces for the attachment *C,C*; C,C are made from strap-iron 1¼ inches wide, ¼ inch thick and of sufficient length to encircle the base of the kymographs, *K,K*; *E,E*, thumb-screws for tightening of parts *C* around *K*; *D,D*, thumb-screws for adjustment of *B,B*, on *A*. The entire apparatus may be nickeled or given a coat of aluminum to prevent rusting.

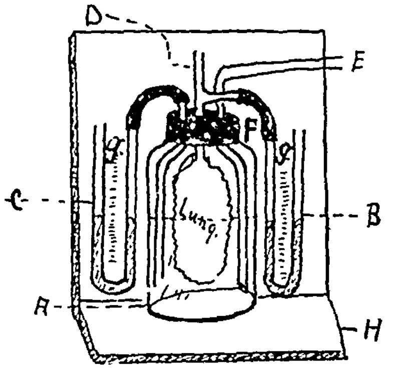


Fig. 2.—*A*, quart Mason jar the sides of which represent the chest wall; *F*, cap of the jar through which a large opening is made and a three-hole rubber stopper is placed; *D*, a T-tube, passing through the opening represents the trachea, to the lower end of which animal lungs are fastened; *B*, a mercury manometer connected to side branch of *D*, registering intrapulmonic pressure; *C*, a mercury manometer connected with space between lungs and bottle, registering interpleural pressure; *E*, a tube connected with a movable reservoir of water, raising or lowering of which will produce respiratory movements; *G,G*, millimeter scales for the exact determination of the changes; *H*, the support to which the entire apparatus is firmly secured. The lungs may be attached to the trachea by removing the cap of the jar and detaching the rubber connections to the manometers.

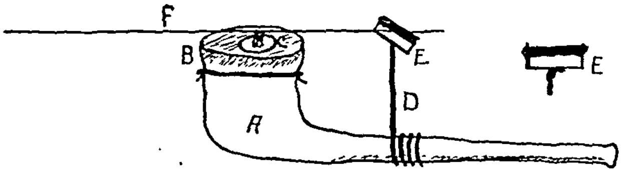


Fig. 3.—*A*, a clay pipe over the bowl of which a piece of rubber tissue is tied; *C*, a piece of cork or circular aluminum plate to which a lever, *F*, is lightly fastened. *D*, a piece of stiff wire encircling the stem; to its upper extremity *E* is soldered; *E*, a narrow strip of tin with ends bent at right angles; a rubber band is lightly stretched between the uprights. The lever, *F*, can be made from aluminum wire. It perforates the rubber band and rests on the cork, *C*.

An extension kymograph suitable for most purposes can be conveniently made by using two ordinary Harvard spring kymographs as a basis (Fig. 1). In operation one drum may be thrown out of gear or both kymographs run at uniform speed. In the laboratory any group of students having two small kymographs can make an extension kymograph. The cost of the entire apparatus is less than $4.

A scheme designed to show phases of respiration, respiratory pressures and their modifications can be made from a quart Mason jar (Fig. 2).

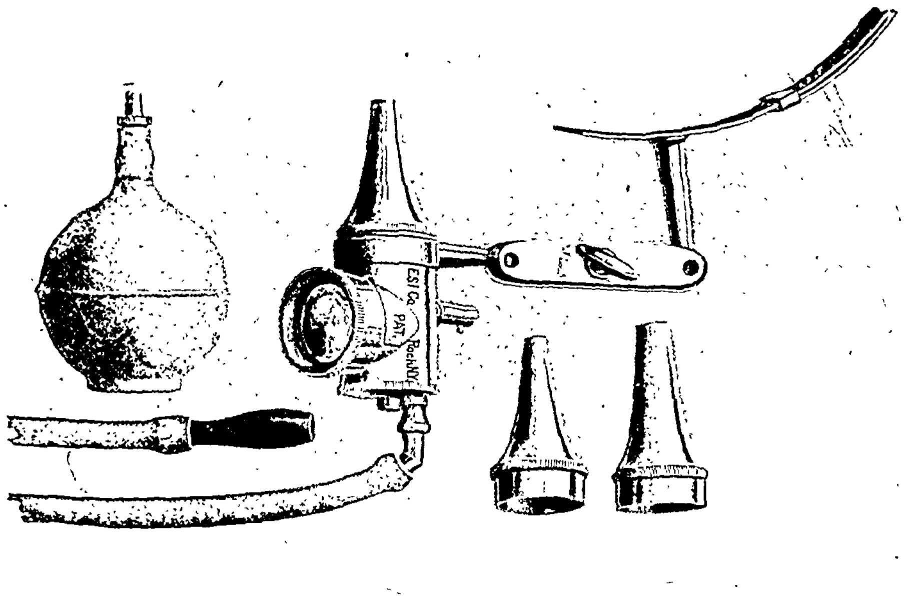
Ether cones suitable for animal work can be made from coarse meshed wire. Rectangular strips of wire are bent into suitable form and the ends soldered or wired together. Pieces of gauze are wound back and forth through the top as in the Allis inhaler. Canvas is sewed on the outside of the cone. If this is then covered with a melted mixture of white wax and paraffin a tight and ether-saving cone results.

An inexpensive tambour can be made from an ordinary clay or cob pipe (Fig. 3).

## THE MYRINGOSCOPE

George G. Carroll, M.D., Rochester, N. Y.

This instrument consists of a cylinder, one end of which is closed, and at the other end is fitted any one of three sizes of specula depending on the caliber of the external canal of the ear to be examined. On one side of the cylinder there is a round window with a magnifying lens, while inside and opposite the round window is a plain mirror at approximately an angle of 45 degrees. Inside the cylinder is attached a Tungsten lamp lighted by a 2½-volt dry battery, or it can be lighted by any other rheostat or controller desired. There is also attached to the cylinder an auscultation tube.



Myringoscope, with additional specula and bulb for converting instrument into a Siegel otoscope.

This instrument is held into the canal of the ear by an adjustable spring that fits laterally across the head. Before this instrument is used the external auditory canal should be thoroughly cleansed and an ear-piece of the proper size fitted, while at the same time any unusual characteristics of the external auditory canal can be noted, so that in using the myringoscope the best possible view may be had of the membrana tympani.

In using this myringoscope the spring is fitted across the head from the upper extremity of one ear to the other, the spring being bent first, if necessary, so that it will clasp the sides of the head firmly; then the clamp is bent down and lastly the speculum end of the instrument is swung into the external auditory canal, being pressed inward, upward and backward. It is also to be remembered that all movements are reversed. This instrument when in position gives the operator, while seated in front of his patient, a magnified view of the membrana tympani, while at the same time he has the advantage of the auscultation tube while inflating the tympanum. If a rubber band has previously been stretched around the tip of the ear-piece so as to make it fit as perfectly as possible to the external auditory canal, the instrument can, in a moment, be converted into a Siegel otoscope by attaching a rubber bulb to the auscultation tube at the ear-piece of the operator. Thus a comparison can be made between the excursions of the membrana tympani from inside pressure, and those of the Siegel otoscope compression and aspiration.

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* From the Laboratory of Physiology of the Starling-Ohio Medical College.

So far as I know, the use of such an instrument is new for the study of the patency of the eustachian tube, inflation of the tympanum and the study of the excursion of the membrana tympani from inside air-pressure, as compared to the Siegel otoscope findings from without. Just what its efficiency will be in diagnostic work, time only can tell.

304 West Avenue.

## A NEW RETRACTOR FOR THE ABDOMINAL CONTENTS DURING PERITONEAL CLOSURE

M. B. Ahlborn, M.D., Wilkes-Barre, Pa.

This retractor was devised to take the place of the spoon and other appliances, which it becomes necessary to remove after the peritoneum is partially closed. The retractor, as will be seen, consists of five blades (or more if necessary, for increasing its field of retraction), a set-screw and a handle, all of which come apart by simply unscrewing a set-screw, thus rendering washing and sterilization extremely easy.

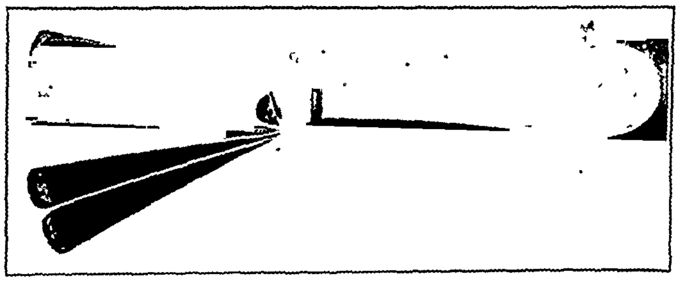


Figure 1.

For use the blades are attached to the handle and spread out like a fan with their edges just touching, this being done to prevent catching any abdominal contents when the retractor is closed and withdrawn at the end of the peritoneal suture (Fig. 1). The blades are set in this fan shape by screwing down the set-screw just tight enough to make them fairly rigid and they cannot become loose and drop off as the fifth or bottom blade has a very deep-seated thread to hold the screw, requiring a number of turns before the screw can be withdrawn from the blades.

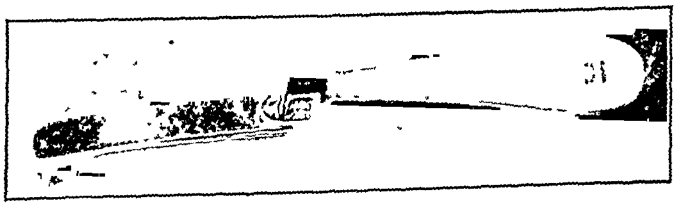


Figure 2

The retractor is placed in the wound and held by an assistant but not pressed down hard, as this causes the bowels or mesentery to slip up over the edges of any retractor. The weight of the instrument is sufficient to keep all abdominal contents back and the suturing of the peritoneum proceeds in the usual way, the peritoneum being picked up and held for suture by the usual clamps. When the wound is closed, except for the setting of the last stitch, the assistant simply gives a slight pull on the end of the retractor, when it closes as shown in Figure 2. The end of the closed blades can be retained in the angle of the wound until the passing of the last suture and formation of the knot, when it is removed and the knot tied.

The pictures show the instrument about one-third the actual size, it being 8 inches long and 3 inches across the outspread blades, when they are overlapping edge to edge. Of course the size of this retractor may be varied by altering the length and breadth of the blades.

It has been in practical use for some time and answers the purpose better than any I have yet seen devised.

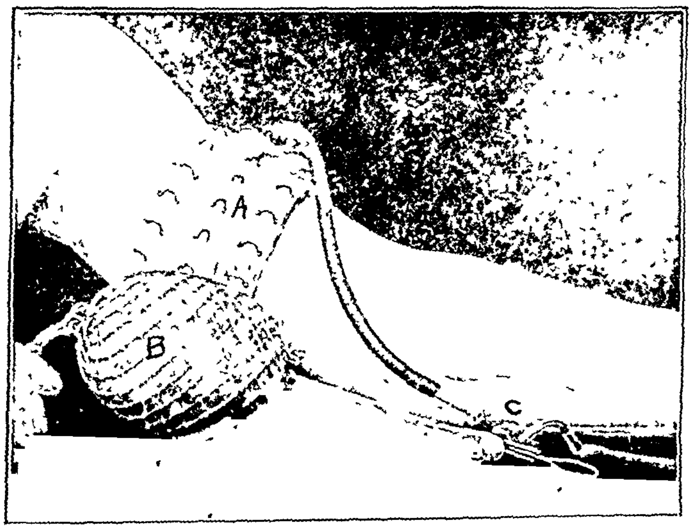
99 North Franklin Street.

## A SIMPLE TOURNIQUET USED IN GIVING SALVARSAN INTRAVENOUSLY

Thomas F. Laurie, M.D., Auburn, N. Y.

This simple and useful tourniquet consists of parts from a sphygmomanometer (Riva-Rocci). As may be seen from the illustration the parts used are the arm band, the inflating bulb and the relief cock, all connected by rubber tubing.

I present this more for those who are accustomed to giving salvarsan or neosalvarsan in their offices with no help except that which can be given by the patient. My experience has been that rubber tubing wears out very soon by repeated boiling and use; pressure has to be maintained for a longer period than is necessary with this apparatus and after the needle is inserted into the vein it is often folly to let go of it to release the tourniquet. I have also found that it is difficult for the patient to release it with one hand. Bandages and like materials are not good for the same reason and also on account of their inelasticity.



Tourniquet: A, arm band; B, inflating bulb; C, relief cock.

It is easy with this apparatus, after one has everything sterilized, including the hands, to request the patient just before inserting the needle into the vein, to inflate the arm band by means of the bulb. Then, when the fluid is ready to flow, it is a simple matter for the patient to release the pressure by pressing the relief-cock with his free hand.

15 Grover Street.

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**Resistance of the Bladder to Tuberculosis.**—The bladder offers considerable resistance to attack by the tubercle bacillus, even when the mucous membrane is injured, as shown by experiments. Rovsing has demonstrated that tubercle bacilli, injected into the bladder and allowed to remain, often fail to produce a lesion. This explains how it is that in many cases of tuberculous nephritis the bladder remains healthy. But if other pyogenic organisms, and especially those which decompose urea, are present, the resisting power of the mucous membrane is greatly weakened, and secondary infection is almost certain to occur.—David Newman, M.D., *Glasgow Med. Jour.*, October, 1913.

# *Therapeutics*

## INFANTILE CONVULSIONS

Although the occurrence of convulsions is only a troublesome symptom of an underlying condition and, therefore, an entity, still the issue is of such importance that active means must many times be taken for their suppression, and prompt treatment must prevent, if possible, their recurrence. Prevention presupposes a diagnosis of the cause. The predisposition to convulsions which occurs in infants and young children is manifestly because of the ease with which their central nervous systems may be inordinately excited. This is shown by the fact that the conditions which frequently cause convulsions in young children may not cause them in an older child. About 75 to 80 per cent. of all infantile convulsions occur under the third year of life, and almost all (unless epileptic) occur before the child is five years old. Nearly 50 per cent. of all infantile convulsions occur during the first six months of life, nearly 25 per cent. before the end of the first year, not far from 25 per cent. during the second year, and in a few instances they occur as late as the fourth or fifth year.

Heredity seems to play a large part in the frequency of the convulsive seizures. The child of neurasthenic, hysteric and neurotic parents seems to be predisposed to convulsions. Healthy children from healthy parents rarely suffer convulsions, unless from some acute cause. If births are too frequent, the later children, even of healthy parents, are more or less predisposed to convulsions, because of their lessened vitality. The probability of convulsions in an artificially fed child is greater than it is in one who is breast-fed or who receives properly modified cow's milk.

Chronic, debilitating diseases, such as syphilis, tuberculosis, scurvy, anemia (whether from hemorrhages or from lack of nutrition), and rickets, especially, are frequent causes of infantile convulsions. They are also commonly caused by gastro-intestinal disturbance, perhaps an acute indigestion, with colic, vomiting, diarrhea, and more or less sudden absorption of toxins; or a chronic indigestion with a constant absorption of irritant products. In children affected by chronic intestinal disorder there is more or less emaciation and debility. In considering rickets as a cause, perhaps the underlying condition—some disturbance of one of the internal secreting glands, or improper food—may, through the debility so induced, result in convulsions, either from local irritation or toxic absorption. Convulsive movements such as slight muscle rigidities or mild laryngeal spasms often occur without intensification into a general convulsion. Sometimes this condition becomes a tetany.

Irritation of the gums during dentition is not as frequent a cause of convulsions as it once was thought to be, and the fact should be generally recognized that teething, as such, causes neither convulsions nor infantile diarrhea; but, if there be a swollen, red, edematous gum over a tooth that is about to erupt, it may be the cause of a convulsion, and should be lanced.

Intestinal worms probably do not cause infantile convulsions, but in producing active intestinal indigestion they promote the absorption of irritant toxins.

Besides the pain caused by inflamed gums, pain produced either by an inflammation in the ear, or by some other acute inflammation in the head, may be the cause of convulsions. Acute pain anywhere may cause such spasmodic crying and contractions of the muscles that congestion of the brain and a convulsion will result. Obstructive adenoids in the nasopharynx seem at times to be a cause of convulsions.

Irritation from a very much elongated and almost impervious prepuce has been a cause.

The statement has many times been made that the high fever incident to an acute infection frequently causes these diseases to be ushered in by a convulsion. While such convulsions in young children are not uncommon, still they can hardly be said to be frequent, and although they have been likened to the chill with which infections in older children and adults begin, they should not often be so considered. A convulsive onset in such acute infections as scarlet fever, diphtheria and measles is infrequent.

Acute lung congestion, as in pneumonia, may produce preliminary convulsions in very young children. Meningitis in any form presumptively induces convulsions somewhat more frequently in children than in adults.

Whooping-cough also may cause cerebral congestion and even meningeal hemorrhage sufficient to occasion convulsions, though a real apoplexy with paralysis from this disease has not occurred.

Convulsions that occur in a child soon after birth are often the result of instrumental delivery, and may be due to the abnormal pressure consequent on some displacement of the cranial bones. Convulsions from this cause may be frequent and for some time persistent, or they may soon cease. The condition is always serious, for there may be some hemorrhage into the meninges or the brain tissue, with an associated paralysis.

The relationship of infantile convulsions to epilepsy should always be noted. A considerable percentage of cases of epilepsy in children and a tangible percentage of cases of epilepsy in adults can be shown in which infantile convulsions have occurred. A careful study, therefore, of the frequency and the character of the convulsive attacks in young children may show that the child is suffering from epilepsy, and the cause of the epilepsy must be sought.

## TETANY

Although tetany was first noted and mentioned about 1830, it was almost lost sight of as an entity until about 1890, and since this date, more and more frequently, the condition has been noted and its relation to the internal secreting glands investigated.

Without discussing the history of these investigations, it will be sufficient to say that MacCallum, Voegtlin, Halsted and others have shown that the parathyroid glands are essential to health, and that their removal will cause convulsions or tetany, and later death. It was long thought that to remove the thyroid would cause these convulsions, but this effect was principally because the parathyroids were removed at the same time. MacCallum discovered that the convulsions could be stopped by feeding parathyroid glands or extract, and Halsted, by the transplantation of parathyroid gland tissue, secured the same result. MacCallum also showed that the administration of calcium salts would stop convulsive movements in animals from which the parathyroid glands had been removed. It seems established, then, that parathyroid secretion either detoxicates some product of metabolism, or that its relationship to calcium prevents the loss of calcium to the body; that calcium is a nervous sedative, or at least in its abnormal absence the nervous system is hypersensitized, so that hyperexcitability occurs and the so-called condition of "spasmophilia" develops.

While it has not yet been shown that all or perhaps even many cases of tetany can be attributed to hyposecretion in the parathyroid glands, still some necropsic findings have shown, in children who have had tetany and convulsions, that there were hemorrhages into the parathyroids, which interfered with their function. It seems quite likely that some cases of tetany and perhaps of infantile convulsions are due to disturbance in the parathyroid glands. It has been shown by some investigators that young infants suffering from spasmophilia and later proved to have some pathologic condition of the parathyroid glands, have evidenced during their period of illness a hypersensibility to the galvanic current. A clinical determination of the border-line between normal and abnormal sensibility to electric stimulation is, of course, difficult. It has long been known that sufferers from hypersecretion in the thyroid, especially as in Graves' disease, have an increased sensibility to electric stimulation.

When the parathyroids are removed and the animal is not allowed to die of intoxication calcium is not normally deposited in bone structure as has been shown in an examination of the teeth. We may, therefore, assume that parathyroid disturbance means calcium disturbance, that some instances of infantile tetany and convulsions are due to disturbed calcium metabolism, and that these convulsive movements may at times be stopped by the administration of calcium. A careful study of the food of infants in which this condition of spasmophilia is present, has shown many times that the food was poor in calcium, namely, that calcium starvation is a distinct cause of these conditions.

Dr. Clifford G. Grulee[1] of Chicago has published a suggestive article on this subject. He states that in 1905 Finklestein observed that an irritating substance prevalent in the whey of cow's milk could cause convulsions. This statement seems to have been confirmed by cases described by Grulee.[2] After he became convinced that a food consisting of a carbohydrate combined with the curds of milk the whey of which had been discarded, was relatively non-irritating in these cases, he attempted to discover by experiments on animals and careful observations on infants what the particular substance was in the whey which produced the irritating symptoms.

He based his experiments on the hypothesis that calcium and magnesium salts tend to allay nervous irritability, while sodium and potassium salts increase it; that, when there is a relative increase of calcium and magnesium over sodium and potassium salts, nervous irritability should decrease, and when sodium and potassium salts are increased relatively to calcium and magnesium, that nervous irritability should increase. Nervous irritability in infants and in animals is most accurately estimated by electric reaction, especially to the galvanic current. It was impossible, however, in his animal experiments to draw any definite conclusion as to why the tendency to tetany in infants is so markedly reduced when the whey is removed from the food.

### TREATMENT

If the little patient is in a convulsion, or convulsions occur frequently, it is of prime importance, both for the infant and for the parents, that the seizures be immediately stopped; and, of course, there is nothing more efficient and perhaps more harmless than the administration of chloroform. It takes but little chloroform to quiet the small patient, and unless chloroform must be used continuously, it probably leaves few, if any, after effects. If the convulsions recur as soon as the child comes from under the anesthetic, a hypodermic of morphin, not more than 1/30 grain for a child a year old, seems generally justifiable in convulsions (although this is a large dose) and may prevent the necessity of the frequent use of chloroform.

It is self-evident that the child must be treated symptomatically; the convulsions must be stopped, whatever the cause may be. Sometimes convulsions will cease, temporarily at least, when the child is placed in a warm bath, that is, a bath a little warmer than the temperature of the child. It should not be hot and certainly should not be cold. Cold applications to the head at the same time may be used, if deemed advisable. The object is to bring the blood to the surface of the body, to dilate the blood-vessels in the abdominal cavity, and thus to relieve the cerebral congestion and perhaps irritation. If the child has high fever, as soon as it is taken out of the warm bath an ice-cap may be applied to the head more or less intermittently, and with the precautions usual for a young infant. Persistent use of cold on the head, especially in the occipital region, is inadvisable for an infant, as its tendency is to depress the medullary centers.

Rectal injections of chloral are often used, the dose depending on the age of the child, but may be larger than should be given to the same child by the mouth; namely, from 0.20 to 0.30 gm. (3 to 5 grains) may be used.

Again, symptomatically, after the convulsions have ceased, bromids may be administered for a day or two, if there seems to be great nervous irritability or excitability. The dose should be graded according to the results; some children require a considerable amount of bromid to quiet them. A safe method is to administer 0.05 gm. (about 1 grain) every three hours, stopping if the child is drowsy.

As soon as the emergency indications have been met the physician should carefully study the condition of the child, primarily for digestive disturbance, and secondarily for all possible reflex causes. Generally, whatever the cause, a good cathartic (best castor oil) should be administered as soon as possible, or an enema may be advisable. Not infrequently there will be a history that the child has eaten something especially disturbing, and an emetic such as ipecac, or a stomach washing, may be indicated.

The child's previous diet should be carefully analyzed, looking toward the possibility of its having been deprived of nutriments that are needed for its welfare; insufficient and improper nutrition can certainly predispose to a hyperexcitability of the nervous system and to convulsions, and the indication for a radical change in diet is often evident.

Grulee reports several cases of convulsions which came under his care in which the convulsions quickly ceased after the whey had been removed from the cow's milk. Sometimes the convulsions recurred when whole milk was again given to the children. The whey-free milk treatment was supplemented in several instances by a thorough clearing out of the intestinal canal, and in other instances by the administration of chloral by the rectum. His favorite food mixture for children consists of curds of 30 ounces of whole milk with 40 ounces of arrowroot water. The amount of the curds should be diminished for younger children. Saccharin is sometimes added to the mixture, and in some cases dextrimaltose. Grulee found not only that the convulsions diminished and ceased, but also that the electrical irritability usually diminished.

That the addition of sodium and potassium salts, corresponding in quantity to those contained in the whey, did not regularly increase the electrical irritability. Grulee thinks is due to the fact that the forms in which the sodium and potassium were given, that is, sodium chlorid and potassium chlorid, either were not readily absorbed from the gastro-intestinal canal, or these salts are not in themselves the irritating factors.

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[1] Grulee, Clifford G.: Dietetic Treatment of Convulsions and Allied Conditions Occurring in Infants, Am. Jour. Dis. Child., March, 1913, p. 205.

[2] Brulee, Clifford G.: Arch. Pediat., 1912, xxix, 24.

He sums up the results of his experiments and observations as not confirming the hypothesis that the increased electrical irritability in spasmophilia is the result of a disturbance of calcium and sodium equilibrium.

If a child shows signs of tetany, however, and certainly if it shows rickets, calcium is indicated, as well as food that contains calcium. Calcium may be given as limewater, as calcium lactate or as calcium glycerophosphate. Calcium lactate 0.05 gm. (about 1 grain) may be given three or four times in twenty-four hours; or 0.10 gm. (about 2 grains) of calcium glycerophosphate may be given in the same frequency. Calcium lactate should be dissolved, calcium glycerophosphate should be given as powder, and either may be administered in milk.

If any one of the many reflex causes of convulsions has been diagnosed, the treatment that must be instituted is self-evident.

If it is decided that the trouble is a beginning epilepsy, the treatment should be directed toward removing any possible evident cause. If no tangible cause can be discovered, bromids should be given more or less continuously to prevent, if possible, the epileptic habit. It is not the object of this article to present the exact treatment of epilepsy.

### GONORRHEA

As no method of treating this disease is the sole method approved, it behooves every physician who treats gonorrhea to study every thoughtful paper on the subject. Dr. George A. Wyeth[1] of New York has presented several recommendations for the treatment of this disease.

Wyeth thinks it is always possible to shorten, and sometimes practically to abort, acute gonorrhea. He believes that a smear of the discharge should be taken each time the physician sees the patient, and that the microscope should determine the treatment: (*a*) the microscope will show if true gonorrhea is present; (*b*) as long as gonococci are present in any number the discharge should not be checked by astringent injections, as they inhibit the local leukocytosis and phagocytosis, which constitutes Nature's method of antagonizing the gonococci and preventing their migration to other parts of the body.

Gonorrhea can be cured, Wyeth thinks, if the center of the infection be definitely located and that region scientifically treated. From his pathologic investigation of acute gonorrheal inflammations, he believes that the process is not early distributed over the entire surface of the urethra, but is predominantly lacunar and perilacunar, and also that phagocytosis is the main defense made by Nature against this germ. He finds that the gonococci on the surface of the epithelium are generally intracellular, while many in the lower strata of the mucous membrane are extracellular; when the discharge shows most of the gonococci to be intracellular the disease yields more readily to treatment and is less stubborn than when many of the gonococci are extracellular. The conclusion arrived at, therefore, is that leukocytosis and the purulent discharge should be encouraged rather than checked, as the greater number of leukocytes in the discharge the greater the likelihood that the gonococci are intracellular. Wyeth uses silver preparations in weak solutions for injection, but the method is best studied in his paper.

## New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

**DIGIPOTEN.**—Digipoten consists of the digitalis glucosides in soluble form, diluted with milk sugar to give the preparation an activity approximately equal to that of digitalis of good quality. Digipoten is standardized by the "one-hour frog" and the guinea-pig methods, and it is adjusted to an activity of approximately 1,400 heart tonic units (of Houghton). It contains from 0.3 to 0.4 per cent. of digitoxin as determined by a modified Fromme method.

*Actions and Uses.*—Digipoten has the same activity as digitalis leaf of good quality and may be used like the official drug with respect to indications and dosage.

*Dosage.*—The same as digitalis.

Manufactured by the Abbott Alkaloidal Company, Chicago, Ill. No U. S. patent or trademark.

*Digipoten Tablets.*—Each tablet contains digipoten 0.03 Gm. (½ grain).

Digipoten is prepared by extracting digitalis leaves with diluted alcohol, the alcohol being removed by distillation in vacuo, the resulting extract filtered, and the filtrate precipitated with tannin; the precipitated tannates of the glucosides are washed with water, and the glucosides are liberated in the usual manner. The resulting dark green brittle powder, which has an activity of about 12,000 to 16,000 heart tonic units, is triturated with sufficient milk sugar to reduce the activity of the finished product to the standard.

Digipoten is a pale green powder, possessing the characteristic bitter taste of digitalis. It is soluble in water and in 25 per cent. alcohol.

On ignition it leaves no appreciable amount of ash. If 0.1 Gm. of digipoten be dissolved in 2 Cc. of glacial acetic acid containing a trace of ferric chlorid and underlaid with concentrated sulphuric acid, there appears at first a brownish zone, changing to red, and finally the upper layer changes to a dark green (Digitoxin).

In addition to the biological standardization the digitoxin content of digipoten is determined by the following modified Fromme method: 30 Gm. of digipoten are placed in a flask of 500 Cc. capacity, and 270 Gm. of water and 10 Gm. of lead acetate are added and allowed to macerate for three hours with constant agitation. The precipitate is allowed to settle and 207 Gm. of the clear liquid is decanted upon a filter of a diameter of 18 Cm. The excess of lead is removed from the filtrate by the addition of 5 Gm. of sodium sulphate dissolved in 6 Gm. of water. The precipitate is allowed to settle and 164 Gm. of the clear fluid, representing 15 Gm. of digipoten, is passed through a filter. This filtrate is transferred to a separatory funnel of a capacity of 250 Cc. and 4 Cc. of ammonia water is added, after which it is extracted with four to five portions of 45 Cc. each chloroform, the successive extractions being filtered through a chloroform-wet filter into a tared Erlenmeyer flask. The chloroformic extracts are then evaporated on a water bath to a constant weight. The crude digitoxin is dissolved in 4 Gm. of chloroform and the solution is poured into a mixture of 10 Gm. of ether and 70 Gm. of petroleum ether with constant agitation. The resulting precipitate is collected on a filter of 5 Gm. diameter and washed with a small amount of petroleum ether. The washed residue is dissolved in hot absolute alcohol and rinsed into the tared Erlenmeyer flask previously used. The alcohol is evaporated on a water bath and the residue is dried to a constant weight at a temperature of 90 to 100 C. and the weight of the purified digitoxin is determined.

**TANNIGEN TABLETS.**—This dosage form of an accepted proprietary article has been accepted.

Each tablet contains tannigen 0.5 Gm. (8 grains).

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[1] Wyeth, George A.: New York Med. Jour., June 14, 1913.

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SATURDAY, DECEMBER 6, 1913

## ALIMENTARY TOXEMIA—INTESTINAL AUTO-INTOXICATION

The interchangeable expressions, "alimentary toxemia" and "intestinal auto-intoxication," are employed with a degree of facility in medical literature that might lead one to suppose they designate some very definite clinical entity or easily recognizable group of symptoms. Indeed, the words have already found application in reading-matter that appeals to an even wider circle; for they enter into the advertising columns which are edited for the perusal of the layman by the exploiter of proprietary remedies.

Let us frankly admit at the outset that much, if not most, of what has been written or spoken on the subject is largely based on figments of the imagination or uncritical endeavors to provide a seemingly comprehensive general explanation for a variety of unrelated common symptoms of human malaise. In the midst of all this ignorant and pseudoscientific argument it is refreshing to hear of the review of the real status of the question of alimentary toxemia and of the frank exposure of the limitations and inconsistencies of current knowledge of a hazy topic which was made by some of the speakers in a recent symposium on this theme before the Royal Society of Medicine in London.[1] Dr. W. Hale White, in particular, called attention to the fact that much that is maintained in reference to alimentary toxemia really is inadequate and unjustified. Presumably what is usually meant by this term is an illness due to poisons absorbed somewhere in the alimentary canal and produced within the gastro-intestinal tract by microorganisms resident therein. Yet no one who accepts this point of view can explain what these poisons really are nor can he identify the bacterial organisms which are charged with pernicious chemical activity. As Hale White notes, the expression "alimentary toxemia" at once shows our ignorance, for it is unscientific to group cases of poisoning according to the point at which the poison entered the body. The nature of the poison should be the distinguishing factor; "it is a minor matter whether our murderer comes in at the window or at the door."

While protesting against the current practice of talking learnedly where ignorance still reigns supreme, we need not despair of decided progress in the future. Hitherto it has been indol and its derivatives, phenols, a few diamins like putrescin and cadaverin, hydrogen sulphid, and a few other compounds—but particularly the first group—which have had to bear the burden of the charge of specific toxicity in the discussions on auto-intoxication. Research in the field of biochemistry is, however, continually adding new possibilities in this direction. The production of highly active substances like beta-imidazolethylamin from histidin in the alimentary tract is an illustration. There are, without doubt, numerous other pharmacologically potent compounds derived from our food-fragments by bacterial reactions which proceed beyond the limitations of the reaction of the ordinary digestive enzymes.

It is by no means unlikely that what is termed alimentary toxemia may in some cases really be hepatic disease—that the failure of the liver to protect the organism is the real fault. Dr. Saundby insists that under physiologic conditions the natural protective agencies in the alimentary system are sufficient to shield the body from the dangers of poisons formed therein or those introduced with the food, provided that these are not overwhelming in amount. Such morbid symptoms as arise may well result from a breakdown in the protective machinery in consequence of functional defects or pathologic changes in the organs concerned. When we ask, however, what the latter may be, no reply that extends beyond the suggestion of analogies is forthcoming.

Of course, no discussion of alimentary auto-intoxication is complete without reference to intestinal stasis as a predisposing cause. What symptoms and conditions have not been ascribed to this? Cystic disease of the breast, cancer, duodenal ulcer, Bright's disease, exophthalmic goiter are actual examples. As a matter of fact infrequent evacuation of the bowel is consistent with perfectly good health and longevity; and simple constipation—that is, mere fecal retention—by no means necessarily favors the production of poisonous substances or the occurrence of pathologic symptoms. If, however, alterations in the wall of the alimentary tract have taken place many symptoms may result from fecal stasis; and it is perhaps to such inflammatory consequences that objectionable accompaniments of constipation may be attributed. We are favorably impressed by the remark of Saundby that so long as the several organs concerned are structurally healthy, the intestinal contents are practically outside the body and are powerless to injure us. Infrequent or incomplete evacuation of the colon is not of itself necessarily a cause of disease.

If the ill health involved in the conditions under discussion were due to special bacteria the best treatment would be to prevent the ingestion of the offenders. Owing to our ignorance of the cause this cannot be done. Nor does the use of so-called intestinal antiseptics offer any promise of success. The widely proclaimed sour-milk therapy has sought to prevent the formation of the medium in which the bacteria grow; but the outcome is frankly uncertain if not actually disappointing. Where there is delay in emptying the bowel, a dozen and one devices, from the simplest aperient to the most complex hydropathic treatment, are available, and some surgeons like Arbuthnot Lane have been trying to limit the hypothetic formation of hypothetic poisons in the intestine by preventing delay of evacuation through the short-circuiting or removal of the large bowel. Here we cannot refrain from quoting the words of Hale White: "When these cases are reported we are always assured that all medical means had been adopted without benefit, but we are never told what the medical means were. . . . A suspicion comes to one's mind sometimes that perhaps some surgeons do not know all the means the physician has at his command for the treatment of delayed action of the bowels."

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[1] Proc. Roy. Soc. Med., 1913, vi, Supplement, Part 1.

## MAN, MONKEY AND THEIR PARASITES

The so-called specific immunity reactions which have been so extensively investigated in recent years have emphasized some unusual relationships among animal species. These have expressed themselves, for example, in the precipitin and hemolysin reactions. The serum of an animal immunized against human blood gives also a precipitate in the serum of the anthropoid apes. Similarly the hemolysins specifically developed to lake human blood-corpuscles act on those of the man-like apes. The reaction at once ceases, however, in the case of the ordinary monkeys.

A recent writer remarks that embryology, paleontology and comparative anatomy may have taught the same general facts, but it comes as somewhat of a shock to many to realize that man's kinship to the monkey goes so far as a "blood relationship." Few persons are as yet aware of the fact that this relationship of man by no means applies to all of the monkey tribe, but only to that group including such examples as the chimpanzee, orang, gorilla and gibbon, and not to the more common monkeys of the *Macacus* type. This subtle distinction shown in the various serum reactions is of unusual scientific interest. V. L. Kellogg, entomologist of Leland Stanford Junior University, has furnished a new and somewhat startling kind of evidence of the relationship of man to the anthropoid group of apes in distinction from others of the monkey tribe. It is based on the contention that the host distribution of the wingless, permanent skin parasites (ectoparasites) of the higher animals, including birds and mammals, is governed more by the genetic relationships of the hosts than by geographic range or any other environmental condition.[1] If this is correct the kinds of permanent ectoparasites found on individuals will indicate in some measure the genetic relationships of the hosts.

According to Kellogg[2] the wingless, permanent ectoparasites of birds and mammals are of two groups, namely, the biting lice, *Mallophaga,* feeding on the feathers and hair, and the sucking lice, *Anoplura,* feeding on blood. Certain mites (*Acarina*) may perhaps also be assigned to this category of permanent wingless parasites, but the fleas cannot be, for they hop on and off their host, and all their immature life is non-parasitic and wholly apart from their future hosts. The *Mallophaga,* of which nearly two thousand species are now known, occur chiefly on birds, while the *Anoplura,* of which less than a hundred are known so far, are confined to mammals. No biting lice have been found on man or on any anthropoid.

Sucking lice of species representing two genera, *Pediculus* and *Phthirius,* occur on man. Representatives likewise have been found on the anthropoid gibbons and chimpanzee. The other tailed monkeys which, in contrast with the man-like apes, are shown by the "blood relationship" tests to be unrelated to man, harbor parasites of entirely distinct genera. The resemblance of man to his simian cousins crops out in this most unexpected fashion.

How these remarkable affinities of host and parasite are preserved is not easy to explain. The California entomologist responsible for the facts recited states that he has often become, in the course of collection, the temporary host of various bird- and mammal-infesting biting lice, but these parasites all seemed as anxious to escape as he was to have them. And they did escape; or, if they did not, they died in a few hours. There is, indeed, an extraordinarily exact fitting of parasite to host in the case of biting and sucking lice. It is hard to understand—to quote Kellogg—of just what details this fitting consists, beyond the more obvious structural and morphologic differentiations. The essential fitting is far more subtle. It is a fitting to the host's physiology as well as to its epidermal structures.

## THE STATUS OF THE BOUILLON CUBE

A survey of the advertising literature in which catch-phrase display-lines form a conspicuous feature reveals the novel expression "bouillon cubes" among the more recent innovations. We assume that the thinking part of the purchasing public, and above all the physicians, have by this time been educated into an appreciation of the limitations of extract of meat as a source of nutriment to the human body. There was a day when, owing to the domination of Liebig's teachings and the influence of his honored name, beef extract was looked on as embodying the very essence of nutrition. The fact that the nitrogenous extractives of muscle tissue furnish to the organism neither constructive material nor energy in any noteworthy amount does not, of course, impugn their efficiency in vigorously exciting the secre-

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1. Kellogg, V. L.: Distribution and Species-Forming of Ectoparasites, Am. Naturalist, 1913, xlvii, 129.

2. Kellogg, V. L.: Ectoparasites of the Monkeys, Apes and Man, Science, 1913, xxxviii, 601.

tion of the gastric juice, promoting the flavor of foods into which the extract of meat may enter and in rousing the appetite. We must never lose sight of the fact that this is their true function in both health and disease. They are flavoring agents and, in the words of a well-known writer on dietetics, "their proper place is in the kitchen and not by the bedside."

However widely this fact may deserve appreciation and even seem to receive it at present, the American public is a gullible one. From the claim that extract of meat — to quote some actual representations of misbranding — is "a concentrated food that represents the nourishing constituents of fresh beef," or "a combination of all the strengthening and stimulating properties of prime lean beef," or "the most perfect form of concentrated food known," it has been a short step to another suggestive type of advertising. Now it is to the category of the "brain-fag" relievers that the extract of meat in its up-to-date guise of bouillon cubes has been consigned by the present-day exploiter. Undue claims of nutritive superiority are no longer made; but the meat extractives have joined the brigade of ready-relief specifics which are intended to enable the jaded worker to finish his day's task. At any rate the rôle of the bouillon as stimulant alone is implicitly recognized in this latest enterprise.

Without entering here into the physiologic or dietetic merits of the propaganda for beef-tea drinking, we may nevertheless call attention to some economic fallacies involved in the use of bouillon cubes and point out some unexpected features of their composition.[1] Common salt is the foremost constituent, contributing from 49 to 72 per cent. of the total weight of the cubes of ten leading brands manufactured in the United States and Germany last year. The amount of real meat extract present ranged from 8 per cent. in the poorest to only 28 per cent. in the best brands marketed. It is true, to speak in all fairness, that most of these cubes have *no* advertised claim to be concentrated beef broth or essence. Many persons, however, believe them to be so. little realizing that cubes which contain about two-thirds salt and never more than one-third meat extract are an expensive form of securing the flavor and other virtues of the latter.

Home-made meat broth or meat and vegetable soups contain more meat extractives and real nutrients than the commercial preparations, and they are cheaper than the bouillon or soups prepared from commercial cubes, extracts or juices.[1] This fact need not, however, condemn the popularity of a harmless ready-to-use expedient in the hasty and convenient preparation of a cup of palatable bouillon. One might as well argue that the nutritious ready-to-eat cereals are to be rejected because they are more expensive and, in the taste of many, more palatable than the old-fashioned oatmeal which requires a somewhat laborious culinary treatment. Our contention is that the public, and the physician in particular, should be educated to know precisely what is involved when claims pertaining to diet as well as to drugs are made to attract a purchaser. They can then intelligently count the cost, and balance convenience and elegance against personal effort and economy.

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[1] Those who are specially interested in this topic will find additional details in a publication by *Cook, F. C.*: Bouillon Cubes: Their Contents and Food Value Compared with Meat Extracts and Home-Made Preparations of Meat. Bull. 27, U S. Dept. Agric., Washington, 1913, p. 7.

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## WHERE IS SUGAR BURNED IN THE BODY?

There can be little doubt that the chief seat of the destruction of sugar, the form in which the carbohydrates are finally utilized in the body, is located in the musculature. Energy is immediately needed there and there it is doubtless liberated in the course of the metabolism of the carbohydrates. Older experiments of Chauveau and Kaufmann have indicated that the venous blood flowing from a contracting muscle contains less sugar than the arterial blood flowing to it. A similar consumption of glucose, the normal blood-sugar, has been described as occurring in the isolated contracting mammalian heart when fed with Ringer's fluid containing a small proportion of the carbohydrate in question. We have on a previous occasion pointed to the observations of Knowlton and Starling[1] that a heart, fed with blood and performing a normal amount of work, is able to use up sugar, the consumption of the latter amounting to about 4 mg. per gram of muscle per hour.

The foregoing considerations, though plainly involving the muscle in the metabolism of the carbohydrates, do not elucidate the precise conditions under which the sugar utilization really takes place. Some years ago Professor Cohnheim[2] of Heidelberg offered evidence which he believed demonstrated that the muscles contain an enzyme which can facilitate the combustion of sugar. According to Cohnheim it was not present in the muscle in a preformed state, but required an activator which was furnished by the pancreas. Experiments *in vitro* with muscle tissue-juice and sugar, with and without additions of pancreatic extracts, seemed to substantiate this thesis. It was an interesting outlook, since the alleged facts afforded a convenient basis for attractive hypotheses regarding the undeniable rôle of the pancreas in carbohydrate metabolism, in conjunction with the necessary postulates respecting the participation of the muscles.

The subsequent history of this episode, with its contentions that Cohnheim's results were due to contaminations of a bacterial nature, the repetitions by other workers, the successive contradictory announcements of results now positive, now negative, form a spirited chapter in the investigation of tissue function. The complete exclusion of bacteria in experiments on isolated tissues calls for the greatest care and refinement of laboratory tech-

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1. Sugar Combustion in Pancreatic Diabetes, editorial, The Journal A. M. A., Oct. 25, 1913, p. 1539.
2. Cohnheim, O.: Ztschr. f. physiol. Chem., 1903, xxxix, 396; 1904, xlii 401; 1906, xlvii, 253.

nic. A recent reviewer, Professor von Fürth of Vienna,[3] while admitting the justification of much of the criticism in this field and inclining to an attitude of skepticism toward the repeatedly reported demonstration of sugar destruction by isolated muscle substance, cannot become convinced that, after all, there is not some active factor involved. We are thus prepared for the latest venture in this field of research. Gigon and Massini[4] at Basel have taken up the problem anew. Again we have the story of extreme precaution in the conduct of the tests, the supreme importance of such precaution having been prominently emphasized through much well-directed criticism in the past. The outcome was positive. Sugar was found to disappear when digested aseptically with fresh comminuted muscle tissue. The loss of sugar was not merely small but pronounced.

Reports of this sort, encouraging the belief that the destruction of sugar under the influence of some thermolabile component of muscle tissue is at length definitely demonstrated, are renewed from time to time apparently regardless of the undisputed fundamental findings of Levene and Meyer[5] which bring the subject into a new light. According to these investigators at the Rockefeller Institute in New York the disappearance of glucose noted in even the most carefully conducted experiments with the various tissue extracts is not due to destruction, oxidation, or "combustion" of the sugar, but merely to its synthesis or condensation to compounds of larger molecular weight which do not respond so readily to the analytic methods commonly employed. These important researches place the alleged use of sugar by the tissues in such experimental trials on an entirely different basis. They cannot be overlooked even though they run counter to the hopes which have so often been raised of a final answer to the question which heads these remarks.

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## DO THE KIDNEYS HAVE SECRETORY NERVES?

The wonderful adaptability of the kidneys to certain needs of the organism, and the ready response which they show to seemingly minute changes in the chemical environment of their cells and to more remote circumstances that determine the conservation or elimination of water under sundry conditions, inevitably suggest an inquiry into the nature of the renal mechanism. It has been a familiar experience to rely on the nervous system to explain the more subtle regulatory functions of the organism. In the glandular organs, in particular, the rôle of secretory nerves has long been a prominent one. The dependence of the alimentary digestive secretions on the participation of nervous stimuli in many of the secretory manifestations affords a classic illustration of this familiar relationship. The kidneys have been among the last of the glandular organs to resist the attempt to explain their secretory behavior by the assumption of nervous factors. Gland structures like the adrenals, in which the conditions for the demonstration of the direct participation of nerve stimulation are far from ideal, because the measurement of the effect of the conjectured nervous impulses must be a very indirect one, have nevertheless of late given evidence of secretory innervation in the hands of such investigators as Asher, Elliott and Cannon. The thyroids have been under suspicion in respect to a possible nervous control and have not lacked the charge, as yet not satisfactorily sustained, of response to secretory nerves.[1] It has been generally admitted or assumed, however, that the activity of the kidney must be determined primarily by chemical stimuli. The delicate sensibility which it displays in reacting to the slightest deviation from the normal of blood composition, by excreting water or dissolved substances, is thus analogous to the form of humoral regulation on which the efficiency of the "hormones" is supposed to rest.

The local nervous mechanism of the kidneys has been believed to affect their secretory activity in the direction of augmenting or decreasing it solely by corresponding alterations in blood-supply. The widely—and we believe almost universally—accepted belief that the vasomotor mechanism and changes in the vascular supply furnish practically the only way in which the central nervous system can directly affect the secretion of the kidneys has lately been questioned by Asher and Pearce.[2] Through direct experiment by the familiar methods of nerve stimulation they have reached the conclusion that the vagus contains secretory fibers for the kidney, and that the stimulation of these fibers initiates an increased secretion of urine. The elimination not only of water, but likewise of other urinary components is promoted by the intermediation of these vagus nerve impulses. The investigators seek to fortify their contentions by pointing out that the necessary correlated anatomic evidence is not wanting; for Smirnow[3] is said to have demonstrated nerve-endings in the epithelial cells of the urinary tubules.

It is obvious that if the conclusions of Asher and Pearce are substantiated a revision of many existing ideas in reference to renal secretion may be called for. Purely mechanical explanations of diuresis and the action of drugs on the kidneys must be examined in the light of the new evidence.

We may safely assume that a statement of such far-reaching importance advanced by workers well known in the field of physiologic research will receive prompt critical examination, the results of which must be accepted by those who are interested in the theory of glandular functions.

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[3] Von Fürth, O.: Probleme der physiologischen und pathologischen Chemie, 1913, ii, 327.

[4] Gigon, A., and Massini, M.: Muskulatur und Glykogen, Biochem. Ztschr., 1913, lv, 189.

[5] Levene, P. A., and Meyer, G. M.: Jour. Biol. Chem., 1911, ix, 97; 1912, xi, 347, 353.

[1] Asher, L., and Flack, M.: Ztschr. f. Biol., 1911, lv, 83. Asher, L., and von Rodt, W. E.: Zentralbl. f. Physiol., 1912, xxxi, 223. Asher, L.: Ztschr. f. Biol., 1912, lviii, 274.

[2] Asher, L., and Pearce, R. G.: Nachweis der sekretorischen Innervation der Niere, Zentralbl. f. Physiol., 1913, xxvii, 584.

[3] Smirnow: Anat. Anz., xix, 347.

# Current Comment

## HAS THE VIRUS OF VACCINIA AND VARIOLA BEEN OBTAINED IN PURE CULTURE?

The virus of variola and of vaccinia is less sensitive to the action of glycerin than bacteria in general, and for this reason it is possible to obtain an almost pure virus of practically full strength. Prolonged action of the glycerin, however, destroys the virus, but more rapidly at 37 C. (98.6 F.) than in the cold; if kept at from — 5 to — 15 C. (from 23 to 5 F.), glycerinated virus may remain active for years. A consideration of these facts led Fornet[1] to try other sterilizing agents, which, while freeing the virus from bacteria, would permit of its being preserved by other means than freezing. Ether was found to be such an agent, etherized virus remaining sterile and active for weeks after inoculation on various culture-mediums, such as broth, agar, etc. The continued activity of the virus thus treated was tested by inoculation of rabbits, calves and human beings with the usual typical reactions of vaccination. Etherized virus has even been carried through a series of inoculations on broth, beef-serum and agar without apparent loss of virulence, and Fornet concludes that there is hardly any doubt that proliferation must have taken place. He calculates that in the last instance the dilution of the sterilized virus would have reached 1 : 1,000 billions if there had been no growth; hence, if Fornet is right, growth without doubt did occur. Examined with the ultramicroscope and in other ways, the supposedly pure cultures of virus show minute structures that appear somewhat as diplococci of unequal size surrounded by a clear zone. Similar bodies were found in "cultures" prepared in the same way with the contents of a small-pox pustule. If these results can be repeated, a great advance will have been made, as there will be opportunity not only to study the virus in pure culture, but also to provide a better virus than now available for vaccination. The principle involved may be applicable to other diseases and will soon be given a thorough trial.

## ARSENICAL MYELITIS FROM NEOSALVARSAN

Following the introduction of salvarsan as a therapeutic agent came occasional reports of arsenical poisoning in cases in which it was administered. Many of these were explained as due to overdosage, or to fault in the technic of administration, but ill results occurred which admitted of no such explanation. Gradually neosalvarsan, a compound of arsenic of somewhat more complex molecular structure than salvarsan, has come into use, and experience indicates that it is the safer agent of the two; but neosalvarsan is not without its dangers. Thus Chiari[2] reports a case of myelitis ending in death which in all likelihood was caused by neosalvarsan. The patient was a woman, aged 27, with secondary syphilitic manifestations; she received three intravenous injections of neosalvarsan at four-day intervals, in all 3.3 gm. Immediately after the last injection a scarlet rash appeared, followed by severe vomiting and a few days later by inability to void urine. Six days after the last injection sensory and motor disturbances appeared, progressing to a definite inferior paraplegia. Large, rapidly spreading bed-sores developed, and also a severe cystitis. The condition progressed steadily with severe pains in the legs, diarrhea and anemia, to a fatal termination in six months. Necropsy showed extensive degeneration in the anterior horns and anterior and lateral columns of the cord. In the seventh to ninth dorsal segments the process was so wide-spread that no normal nerve-tissue was discernible in a cross-section of the cord. There was nothing in the clinical history or post-mortem findings which suggested any other explanation of the development of this condition than arsenical poisoning. Chiari cites similar cases and calls attention to the parallelism between the symptoms in these cases and those sometimes manifested in arsenical poisoning from other sources. In salvarsan and neosalvarsan reliance is placed in combinations of arsenic of complex molecular structure. In this form the arsenic is relatively non-toxic, but as in the case of many other compounds, the biochemical agencies of the body may split the complex chemical structures into simpler ones, reducing the non-toxic combinations into products which may be highly toxic to the tissues of the human organism. So long as we are not able to predict with certainty what chemical reactions may take place within the body under various conditions, there will remain more or less risk connected with the administration of drugs so potentially toxic as are these higher compounds of arsenic. For future guidance, all instances of unfavorable outcome after their use should be recorded in detail with great care.

## OVERCROWDED STREET-CARS

A narrow car; seats filled with persons attempting to read newspapers while the car swings and jolts along its way; aisles jammed with men and women, boys and girls and tiny children, swaying and rubbing, one against the other, coughing and sneezing, pushing and pressing — what a sight for a progressive age; what a sermon for the moralist; what a despair for the student of public health and hygiene! Endless problems are presented by this picture, seen daily in nearly every American city. Most important is the menace to health from the thousands of bacteria, hidden in the throats of diseased men and women, and sprayed directly into a stagnant air, moist and unmoving in the absence of sufficient means of ventilation. Virulent organisms are inhaled into the throats and lungs of tired workers and tiny babes, who form an excellent host for their quick cultivation. The fare for the ride is small, but the cost cannot be estimated in terms of dollars and cents.

## DANCING FOR THE AGED

The following newspaper item just received emphasizes the point made in our comment last week regarding the danger for old persons of the newer dances:

> Shortly before midnight last night at his home, occurred the death of Dr. ———, who for more than forty years had practiced his profession in this city. His death is all the

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[1] Fornet: Deutsch. med. Wchnschr., 1913, xxxix, 1813.

[2] Chiari: Ueber eine nach Neosalvarsaninjektionen aufgetretene "Myelitis, Verhandl. d. deutsch. path. Gesellsch., Marb., April, 1913.

more tragic because a short time before the summons came, he had been with his wife in attendance at a dancing party at Cronkhite Hall, where he had been learning the tango and other new dances. The strenuous exercise, it is thought, somewhat affected his heart, causing his death.

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# Medical News

## CALIFORNIA

**New Hospital Assured for University.**—The task has now been completed of raising $600,000 in subscriptions for the erection of a new teaching hospital for the University of California. The work of securing the subscriptions was in the hands of Regent William H. Crocker, Dean Herbert C. Moffitt of the Medical Department of the University of California, and Dr. Wallace I. Terry. Plans are now being prepared by Mr. Louis Hobart for this new University Hospital, which will be started next spring on the "Affiliated Colleges" site on Parnassus Avenue, San Francisco, adjoining the present University of California Hospital. Among the principal donors were John Keith of San Francisco, who gave $150,000 in memory of his wife; Mr. William H. Crocker and Mrs. Harriet Alexander, who gave $50,000 each; and Mr. Charles Templeton Crocker and Mrs. Malcolm Whitman, who gave $25,000 each, this $150,000 being in memory of the late George Crocker, who founded the Cancer Research Fund entrusted to Columbia University.

## ILLINOIS

**Personal.**—Dr. George A. Zeller, superintendent of the Peoria State Hospital, has been appointed alienist of the state board of administration, vice Dr. Frank P. Norbury, Springfield, resigned.——Dr. Harry M. Hayes, Peoria, who has been seriously ill at the Proctor Hospital with typhoid fever, is reported to be improving.——Dr. Rockwood Sager, Rockford, is reported to be critically ill at his home.

**Health Conditions in Chicago.**—The *Bulletin of the Chicago Department of Health*, November 8, reports that the death-rate in the city of Chicago for the ten months of 1913 from all causes was 15.3 per 1,000 as against 13.8 for the same period of 1912. The report states that in nearly all diseases that contribute most heavily to the death-rate increases are shown over the corresponding period of 1912, particularly with reference to the dirty air diseases, influenza, pneumonia and tuberculosis. Scarlet fever showed the largest increase, with a record of 852 deaths for 1913 as against 452 for the same period in 1912, an increase of 400 deaths. During this period in 1913, increases are shown in the number of deaths from measles and diphtheria and the diarrheal diseases of children under 2 years of age. The month of October, however, showed an improvement over the corresponding month of the previous year, except that the typhoid deaths amounted to forty-two as against twenty-two for October, 1912. The narrow source from which a large number of typhoid cases frequently come is illustrated in the typhoid in Chicago. Ten cases were traced to one milk-wagon driver who stayed at work after he fell sick. Twenty-nine cases were traced to one kitchen helper who came to Chicago from St. Louis half recovered from typhoid. To Oct. 1, 1913, thirty-nine out of each 100 cases of typhoid in Chicago had contracted the disease outside of the city.

### Chicago

**Dispensary Opened.**—The Salvation Army has opened a free dispensary at 6 East Seventh Street, where Dr. George Ensminger will be in attendance from 12:30 to 2:30 p. m. daily.

**Examination for County Hospital Positions.**—Thirty-four physicians on the staff of the Cook County Hospital took the examination for chiefs of the thirteen departments, November 28.

**Isolation Hospital Site.**—The finance committee of the city council voted November 25 to purchase about 18 acres of land, lying south of the bridewell, for $185,000. The site is to be used for a new isolation hospital and for other municipal buildings.

**Small-pox in the Healthatorium.**—Once on a time there was a group of men whom Nature had endowed with many muscles and a peculiar conformation of cranium. Having much muscle and a modicum of medical knowledge they founded a school of "physcultopathy" which is a hybrid of uncertain etymology, the significant part being "cult," which has been described by the Chicago Health Bulletin as "a group of individuals who frequently claim as one of their cherished privileges the right to disseminate false information concerning the efficacy of vaccination against small-pox." Now there came to the home of the cult, which was known as the Macfadden Healthatorium, a humble unvaccinated disciple from Idaho. Ten days after he arrived, he came down with small-pox, which was unrecognized as such, having no legal existence under the laws of a Healthatorium. He returned to the school while in a contagious state and now ten other unvaccinated disciples are guests of the isolation hospital. A newspaper clipping continues as follows:

> "Dr. Spalding said he held the authorities at the Macfadden school in no wise culpable, but he said none of the patients had been vaccinated.
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> "At the physical culture school last night students, patients of the sanitarium and employees were nursing arms vaccinated by the health authorities. About seventy-five were vaccinated.
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> "In the homes of the six patients like precautions were taken. Members of their families were all required to undergo vaccination.
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> "The healthatorium was in charge of Charles D. King. He showed no alarm over the outbreak.
>
> "A. M. Wood, the manager of the healthatorium, said he felt no cause for alarm."

One of the patients has said that if King and Wood had small-pox, he would feel no alarm. The general conclusion reached is that although a mass of muscle will move mountains, a good vaccination is more powerful in preventing small-pox.

## INDIANA

**Hospital Funds Secured.**—The campaign opened by 200 men of Marion and Grant County, October 14, to raise $40,000 for a new hospital for Grant County, was closed after eight days with a total subscription of $45,005.90.

**New Officers.**—Twelfth District Medical Society in Fort Wayne, November 5: president, Dr. James W. McKinney Bluffton (reelected); councilor, Dr. Elmer E. Morgan, Fort Wayne.——Eleventh District Medical Society at Peru, October 16: president, Dr. George R. Daniels, Marion; secretary-treasurer, Dr. James L. Gilbert, Logansport (reelected).

**New Hospitals.**—St. Joseph's Hospital, Ft. Wayne, which has been erected at a cost of $150,000, has just been completed. The building is six stories in height and is in charge of the Poor Handmaids of Jesus Christ.——The corner-stone of the North Pavilion of the Methodist Hospital of Indianapolis was laid by Bishop William F. Anderson, November 26.

**Conference of Charities.**—The twenty-second annual session of the Indiana Conference of Charities and Corrections was held in Gary, November 17 and 18, and the following physicians were elected to office: vice-presidents, Dr. Kipplinger, Michigan City, and George R. Green, Muncie, and chairman of medical committee, Dr. Charles P. Emerson, Indianapolis.

**Personal.**—Dr. Walter R. Cleveland has been appointed president of the Evansville Board of Health.——Dr. Martin K. Kreider, Goshen, has been appointed a member of the board of trustees of Clarke Hospital, Elkhart.——Dr. James A. Taylor, Montpelier, has been elected secretary of the newly organized Blackford County Association for the Study and Prevention of Tuberculosis.

**Secretaries of Tuberculosis Society Organize.**—The organization was perfected in Indiana, October 17, by secretaries of city and county tuberculosis societies. W. D. Thurber of Indianapolis was elected president and C. A. Hartsley, Evansville, vice-president; Mrs. E. B. Connolly Kehrer, Anderson, secretary-treasurer, and Dr. A. L. Ziliak, Princeton, chairman of the executive committee.

## IOWA

**New Officers.**—Southwestern Iowa Medical Association at Burlington, November 20: president, Dr. Coral R. Armentrout, Keokuk; secretary-treasurer, Dr. Edward F. La Force, Burlington. Mount Pleasant was selected as the next place of meeting.

**Personal.**—Dr. J. B. Gardner, Manilla, is critically ill in the Methodist Hospital, Omaha.——Dr. C. De Witt Rawson, Otley, was seriously injured by the overturning of his automobile, November 13, near Otley.——Dr. W. E. Sanders has been appointed head of the pathologic department of the Methodist Hospital, Des Moines, and Drs. John H. Peck, J. Z. Strawn, Milton G. Sloan, Matthew L. Turner and Nellie S. Noble have been added to the medical staff of the institution.——Dr. Ray R. Kulp, Davenport, fractured his right arm while cranking his automobile, November 10.——Dr. Harry R. Layton, Leon, who has been critically ill, is reported to be improving.

## MARYLAND

**Musicale Given by Physicians.**—A musicale was given at Osler Hall, Baltimore, November 11, by the Doctors' Orchestra and the chorus of the Medical and Chirurgical Faculty of Maryland, for the benefit of the Book and Journal Club. Dr. John Wade directed the orchestra and Dr. B. Merrill Hopkins conducted the chorus.

**Personal.**—Dr. and Mrs. Curtis F. Burnam, Baltimore, sailed for Europe November 19.——Lieut. John C. Stansbury, M. C., N. G. Md., has been commissioned captain and placed in command of Field Hospital, No. 1, succeeding Major Howard E. Ashbury, made a member of the general staff.——Lieutenants G. Milton Linthicum and Frederick H. Vinup, Baltimore, have been promoted to captaincies and assigned to duty with the Fifth and Fourth Infantry, respectively.

**Academy of Science Meets.**—The National Academy of Science, after a two days' session at Johns Hopkins University, closed its meeting with a dinner at the Maryland Club at which Dr. Welch presided as toastmaster. Dr. Simon Flexner, New York City, discussed the causes of infantile paralysis, the experiments made in isolating the germs of the disease and the effects of the virus on monkeys. Dr. Howard A. Kelly made an address on "Radium as a Cure for Cancer."

**New Officers.**—Medical Association of Harford County at Havre de Grace: president, Dr. J. Lee Hopkins, Havre de Grace; secretary, Dr. Charles Bagley, Bagley.——Medical Society of the University of Maryland at Baltimore, November 19: president, Dr. Albert H. Carroll; secretary, Dr. Edward J. Maldeis.——Washington County Medical Society at Hagerstown, November 13: president, Dr. Daniel A. Watkins; secretary, Dr. Ivan M. Wertz, both of Hagerstown.——Frederick County Medical Society at Frederick, November 12: president, Dr. Ralph R. Browning, Myersville; secretary, Dr. Bernard O. Thomas, Frederick.

**Academic Day Exercises.**—At the academic day exercises at the University of Maryland and St. Johns College, November 11, the honorary degree of LL.D. was conferred on Geheimrat Privy Councilor, Prof. Adolph Schmidt, of the medical faculty of the University of Halle. Dr. Schmidt was presented by Dr. John C. Hemmeter, who spoke briefly of the achievements of the German professor. The memorial address for Dr. Eugene F. Cordell, eminent as a medical historian and a member of the faculty of the university, was delivered by Dr. Ralph Winslow. After the academy day exercises luncheon was served at the Emerson and the annual alumni dinner was held in the evening.

## MASSACHUSETTS

**Addition to Hospital.**—The Board of Health of Springfield is building an addition to the Municipal Tuberculosis Hospital to be used by nurses. The addition is 21 by 16 feet and one story in height.

**State Board Appointment.**—Dr. George L. Richards, Fall River, has been nominated by Governor Foss as a member of the state board of registration and medicine to succeed the late Dr. Edwin B. Harvey, Boston.

**State Board Approves Recommendations.**—The Industrial Accident Board of Massachusetts has notified the Essex North District Medical Society, that it has approved the following recommendations of the medical advisory committee and will apply them as far and as soon as practicable.

1. That a permanent Advisory Medical Committee is necessary.
2. That we consider it inexpedient to have a medical man as a member of the Industrial Accident Board.
3. That the Industrial Accident Board should have a consulting surgeon on whom should fall the duty of detail work in preparation of matters to be laid before the Advisory Committee. Matters in dispute regarding services and fees of physicians should be referred to this Committee for recommendation.
4. That insurance companies be requested to provide suitable blanks for notifications as well as specifications of services rendered by physicians.
5. That Industrial Insurance Companies be encouraged to allow all reputable physicians to render services in industrial accidents provided they are willing to render such services on reasonable basis.
6. That the Accident Board should make arrangements with which the insurance companies should cooperate, that any physician whose bill is in dispute may appear before a representative of the Accident Board within a reasonable distance of his home.
7. That the Accident Board shall provide for medical referees by districts.
8. That fees paid by the companies should not be less than the average minimum fee in the locality in which the service is rendered.
9. That charges up to $50 for major operations are not excessive.
10. That physicians appearing at hearings before the Board shall receive the compensation as provided for under Section 8, Part 3,
11. That services rendered by lodge physicians be paid for, provided it is not inconsistent with the rules of the order.
12. That specialists, established and recognized by the profession as such, may receive special rates for their work, provided the case requires special skill.
13. That the ruling previously made by the Accident Board, that "fees should not be charged an injured party whose employer was insured larger than the injured party would be charged were he not insured," should be interpreted to mean that in a given accident the fee paid by the insurance companies for services should not be less than the average minimum fee for similar services in the locality in which said services are rendered.

## MISSOURI

**St. Louis Leper Escapes Quarantine.**—Charles Hartman, declared a leper by the St. Louis Board of Health, has left the leper quarters of the Robert Koch Quarantine Hospital and is believed to be on his way to Mexico.

**Exposure of Quacks.**—At a meeting of the St. Joseph-Buchanan-Andrew County Medical Society at St. Joseph, October 15, a committee, consisting of Drs. O. G. Gleaves, Pierre I. Leonard and Luther A. Todd, was appointed to make [illegible] investigation as is necessary to the exposure of quack [illegible] uthority to employ an attorney.

**Hospital News.**—The new Deaconess Home and Hospital to be erected by the Methodist Episcopal Church in St. Joseph will be five stories in height, and will accommodate five times as many patients as the Ensworth Hospital.——The Sedalia General Hospital was damaged by fire November 11. Five patients were removed from the building and the loss is estimated at $2,000.

**Personal.**—Dr. John G. Hayden, Kansas City, was operated on recently in Chicago for appendicitis.——The barns of Dr. J. H. Roney and Dr. W. G. Estill, Lawson, were burned, November 10.——Dr. David R. Porter, Kansas City, was the guest of honor at a dinner given by fifty of his friends and pupils to celebrate his seventy-fifth birthday anniversary. Dr. J. F. Binnie served as toastmaster.——Dr. Frank C. Wallace, formerly assistant physician at City Hospital No. 2, St. Joseph, has been appointed city physician of Maryville.——The suit of Dr. H. H. Temple, Kansas City, against the Union Pacific Railway and the Pullman Company, in which $40,000 damages was claimed, has been compromised for $3,500.——Dr. Arthur H. Kelley, Rosendale, was stabbed November 14, and is said to be in a serious condition at the Ensworth Hospital, St. Joseph.——Dr. Amos T. Fisher, Maryville, has been appointed assistant physician at State Hospital, No. 2, St. Joseph.——Dr. Amos A. Freymann, Kansas City, was seriously injured in a collision between motor-cars, November 10.——Dr. George E. Krapf, superintendent of the German Hospital, has resigned and has been succeeded by Dr. C. Emil Simon.——Dr. Charles W. Schery has been appointed assistant city bacteriologist.

## NEW YORK

**New Officers.**—Medical Society of the County of New York, one hundred and eighth annual meeting, November 24: president, Dr. T. Passmore Berens; secretary, Dr. John Van Doren Young, both of New York City.

**Open-Air School Nearly Ready.**—The new open-air school for Rochester at Cobb's Hill will be ready for occupancy about December 15. The school will accommodate about one hundred pupils, and will have cost about $10,000 when completed and equipped.

**Tuberculosis Pavilion Opened.**—The east wing of the Children's Tuberculosis Pavilion, Buffalo, has been temporarily fitted up with stoves, electric lights and the necessary plumbing. The building when completed will have cost about $17,000 and will accommodate about forty patients.

**Personal.**—The health officers of New York State at their thirteenth annual conference, November 20, unanimously indorsed the nomination of Dr. Eugene H. Porter as state health commissioner.——Dr. Daniel W. Nead, medical examiner for the Pennsylvania System, at Buffalo, has been transferred to a similar position at Reading, Pa.——Dr. W. Charles Willis, Central Islip, L. I., has sailed for Europe.——Drs. Ward E. Hunt and J. G. McGillicuddy, Little Falls, have been appointed coroners.

**To Make Saratoga Springs a Spa.**—The commissioners of the state reservation have sent a letter to all physicians belonging to county medical societies describing the possibilities of Saratoga Springs as a spa and telling of their plans for the development of the State Geyser Park of over 250 acres. An advisory council is being formed to study the conditions at the springs, and suggest methods for the development, and advise with the commission. It is requested that each county medical society elect immediately a corresponding member of the council, who shall receive the reports and bulletins issued by the commission and shall communicate to his society the facts concerning the progress of the work and shall present annually a brief paper on the springs and their uses, and that it communicate the name and address of the corresponding member at once to Dr. Albert Warren Ferris. It is also requested that each county society arrange for a special or regular meeting, to be held in December, at which a brief paper on the springs shall be presented by the corresponding member of the council.

## New York City

**Harvey Society Lecture.**—The next lecture will be given December 13. The speaker will be Dr. Rufus Cole of the Rockefeller Institute for Medical Research, who will speak on "Pneumococcus Infection and Lobar Pneumonia."

**German Physicians Elect.**—The following officers have been elected by the German Medical Society: president, Dr. Gustav Seeligmann; vice-president, Dr. H. Fischer; recording secretary, Dr. M. Rehling; corresponding secretary, Dr. A. Stein, and treasurer, Dr. S. Breitenfeld.

**Raising Money for Cripples.**—A ten-day campaign is being conducted by Dr. Burr Burton Mosher for the purpose of raising $100,000 for the House of St. Giles the Cripple, which is the only orthopedic hospital on Long Island. It is announced that up to November 29, $71,246 had been raised.

**Fined for Milk Adulteration.**—The McDermott Dairy Company has been fined $1,000 for adulterating milk. The defense offered by the company was that the adulteration was done by a discharged driver. The court held that this was not an extenuation of the offense as the company was responsible for the acts of its employees.

**New Dispensary Now Ready.**—The New York Dispensary has just opened its new building in Spring Street. The original New York Dispensary was founded in 1790 at Five Points and has conducted a clinic for many years in Worth Street. The new building is thoroughly up to date and contains in addition to the usual modern equipment two rooms for the use of the social service department.

**Gift to New York Diet Kitchen.**—This organization, which dispenses pure milk to infants, has just received a gift of 500 shares of Great Northern stock, valued at $63,000, from Mr. and Mrs. Edward Tuck. The income from this fund will be used in maintaining the diet kitchen at 35 West 139th Street. The association had a deficit of $13,000 at the end of the fiscal year, but now sufficient funds are assured to carry on the work.

**Motherhood Not to Bar Teachers.**—Justice Seabury has rendered a decision in favor of Mrs. Bridget Peixotto, who had been suspended for absenting herself from school duties for the purpose of bearing a child. The court has expressed the opinion that the Board of Education has no right to dismiss a married teacher who absents herself from school to give birth to a child and that any attempt to do so would be against good morals.

**Unite to Fight Tuberculosis.**—The social service division of the Free Synagogue, the United Hebrew Charities, and the Montefiore Home have joined forces for the purpose of waging war on tuberculosis. A fund of $20,000 has been subscribed with which to begin work and each of the organizations joining in the work will make a further contribution. The Free Synagogue has pledged $10,000 annually to the work.

**Anniversary Meeting.**—The section on laryngology and rhinology of the New York Academy of Medicine celebrated its fortieth anniversary November 25. An address was made by Dr. Clinton Wagner of London, England, the founder of the New York Laryngological Society, which later became the laryngological section of the Academy of Medicine. Bryson Delavan made an address and presented the section with a bronze tablet.

**Personal.**—The will of the late Dr. Charles McBurney, recently filed at Stockbridge, Mass., disposes of the greater part of his effects to his children, but to the New York Physicians' Aid Society is given any rights, claims or demands that the testator may have against it.——Dr. William K. Jacobs has returned from Europe.——Dr. Francis B. Hart, Brooklyn, has been appointed coroner's physician for the Borough of Queens.——Dr. John McAllister is reported to be ill with septicemia, the result of stepping on a rusty nail.

**Concealed Cocain Stock.**—Through the evidence of a 17-year-old girl, Thomas De Lorenzo, a pugilist, has been arrested for traffic in cocain. Twenty-four packages of cocain were found concealed in a chamber underneath the floor of De Lorenzo's quarters. The evidence shows that three thousand ounces of cocain have been purchased during the last six months. The band of which De Lorenzo is the head paid $15,000 for the drug and sold this amount in small lots for approximately $90,000. The defendant was held in $5,000 bail.

**Montefiore Home Dedicated.**—The new buildings of the Montefiore Home and Hospital for Chronic Invalids at Gunhill Road and Jerome Avenues, were dedicated November 30. A reception was held in the institution by the president and directors from 11 a. m. to 1 p. m. and from 2 to 5 p. m. The medical department of this beneficent institution was organized by Dr. Simon Baruch in 1884. From its original twenty beds, it has now a capacity of 300 patients. Dr. Baruch served as chief of the medical staff for ten years, as consulting physician from 1894 to 1900 and since that time as honorary consulting physician.

**Midwives Must Have Diplomas.**—At a meeting of the Board of Health October 14, the following resolution relative to the practice of midwives was passed: *Resolved*, That the rules governing the practice of midwifery in the City of New York adopted by the Board of Health Nov. 8, 1907, be and the same are hereby amended so as to read as follows; the same to take effect on and after the 1st day of January, 1914: The applicant must be 21 years of age or upward, of good moral character, and able to read and write. She must be clean and constantly show evidence in general appearance of habits of cleanliness. The applicant must also present a diploma or certificate showing that she is a graduate of a school for midwives registered by the Board of Health of the City of New York as maintaining a satisfactory standard of preparation, instruction, and course of study, but the requirement of a diploma shall not apply to any person who is now or has been hitherto authorized to practice midwifery by the said board.

**Reorganization of the Department of Health.**—At a meeting of the Board of Health, Oct. 28, 1913, resolutions were adopted effecting a reorganization of the department by which divisions, which started as insignificant items in the work of the department and have grown to importance, become bureaus. The department now consists of the following bureaus: Bureau of general administration, under Eugene W. Scheffer; sanitary bureau, under the sanitary superintendent; bureau of infectious diseases, under Dr. John S. Billings; bureau of child hygiene, under Dr. S. Josephine Baker; bureau of hospitals, under Dr. J. R. Wilson; bureau of laboratories, under Dr. William H. Park; bureau of food inspection, under Dr. Marion B. McMillan; bureau of records, under Dr. William H. Guilfoy. The bureau of infectious diseases will now include the division of contagious diseases, tuberculosis, venereal diseases, veterinary diseases, institution inspection, typhoid fever, nurses and the diagnosis laboratory. The bureau of child hygiene will include midwife and foundling inspection, institutions and day nurseries, medical inspection of schools, employment certificates, infants' milk stations and children's clinics. The bureau of food inspection will comprise the inspection of meats, fish, vegetables and drugs, city and country milk inspection and the inspection of pasteurizing plants. The chief executives of the bureaus will be required to report directly to the commissioner of health and will be held responsible for the conduct of the work and the efficiency of the employes under their direction.

## NORTH CAROLINA

**Personal.**—Dr. P. B. Orr has been elected health officer of the recently incorporated city of West Asheville.——Dr. Thomas S. Burbank, Wilmington, is reported to be ill with disease of the kidneys.

**Fire Damages Medical Building.**—The early morning fire in the rear section of the Judson Payne Leonard Medical Building at Shaw University, Raleigh, November 8, did damage amounting to about $5,000.

**County Bulletin.**—The health authorities of Sampson County have issued the first number of the Sampson County Health Bulletin. Dr. Cooper, the county physician, is the director, and the bulletin is intended to teach the prime importance of sanitation.

**Monument to Dr. Kerr Unveiled.**—On November 13, the monument erected to Dr. Charles Stevens Kerr by his friends and neighbors at Kerr, was unveiled. Eulogistic addresses were made by Mr. W. S. Robinson, Mr. George R. Ward and Dr. John M. Faison.

**Get-Together Meeting.**—A joint meeting of the councilors of the Medical Society of the State of North Carolina and the State Board of Health was held in Greensboro, November 19, to study methods and devise plans to render more efficient the work of the county medical societies and further to conserve in every way possible the public health interests of the state.

**Hospital Notes.**—The Corcoran Hotel property, Durham, has been leased by the incorporators of Mercy Hospital, who announce that the institution will open January 1.——The corner-stone of the Wilson Hospital and Tuberculosis Home for Negroes was laid with appropriate ceremonies November 27. The principal address was made by W. S. Rankin, secretary of the city Board of Health.——The Red Cross Society of Wilmington announces the completion and opening on December 1 of its sanatorium for tuberculosis, located 2 miles below Wilmington. The institution can accommodate forty patients.

## PENNSYLVANIA

**New Officers.**—Franklin County Medical Association at Chambersburg, November 18: president, Dr. A. B. Sollenberger, Waynesboro; secretary, Dr. John J. Coffman, Scotland.

**Personal.**—Dr. Frederick E. McN. Howell has been appointed chairman and Dr. Daniel N. Bertolet, a member of the committee on health and sanitation of the Reading Chamber of Commerce, which has been established to take up the matter of housing and sanitary conditions.

**Plan for Care of Dependents.**—A constructive program for the care and prevention of dependents in Pennsylvania was announced November 28, by Dr. Charles H. Frazier, president of the Public Charity Association. These plans include a central directing body, such as the State Board of Charities. The recent conference held between the representatives of the State Board of Charities and the Public Charities Association, under the auspices of Governor Tener, was to further the cooperation of the state local authorities in Pennsylvania, for the purpose of making the plans operative and successful. Dr. Frazier discussed the possibilities of cooperation in the care and prevention of tuberculosis.

**Honey Impure.**—Judge Holland, of the United States District Court, is hearing testimony in a food case considered most important by the government because the outcome may change the present method of labeling honey. The question to be determined is whether or not six cases of honey seized by the federal food inspectors in this city shall be ordered destroyed on the grounds of being adulterated. According to William H. Jenkins, in charge of the food inspection bureau, the honey was shipped by the Excelsior Honey Company, of New York, 1912. It was seized before being delivered, after samples analyzed by government chemists indicated it contained 60 per cent. of added invert sugar.

### Philadelphia

**Recognizes Long Service.**—In recognition of his thirty-three years of service to the city as a health officer, Capt. Charles F. Kennedy, first and only disinfector in the employ of the city in 1880, was given a banquet and reception by about fifty employees of the Bureau of Health, November 20.

**Baby-Saving Show Opened.**—The Northern Liberties Baby-Saving Show was opened December 3, in the Friends' Neighborhood Guild, Fourth and Green Streets. The show is under the auspices of the Child Federation. It is estimated that 25 per cent. of the mortality in that part of the city is infantile and that the majority of these deaths are preventable.

**Mütter Lecture.**—The Mütter lecture on Surgical Pathology will be delivered by Dr. Robert C. Coffey, Portland, Ore., in the Thompson Hall of the College of Physicians of Philadelphia, at 8:30 p. m., December 12, on "Chronic Constipation Considered From the Embryologic Anatomical and Experimental Standpoints," illustrated by lantern slides and drawings. After the lecture a reception will be given to Dr. Coffey at the Hotel Rittenhouse.

**Seizure of Impure Food.**—On November 20, as a result of the work by state and city veterinarians and food inspectors, between 11,000 and 12,000 pounds of fish, game, and poultry were condemned as unfit for food and sent to local fertilizing works, where it was destroyed. The condition of the food products was blamed directly on the abnormally warm weather by the officials. The quantity seized represented shipments from Southern and Western points, valued at several thousand dollars.

**Baby Improvement Show.**—Almost 600 babies have been registered in the baby improvement contest being held by the Child Federation at their headquarters, Tenth and Bainbridge Streets. Babies showing the greatest improvement in two months will receive prizes of $25.00, $15.00 and $10.00. Babies when entered are given a physical examination, which is repeated the last Monday of the contest, and careful records are made of all data revealed. Normal infants between the age of 1 month and 2 years are eligible. The purpose of the contest is to stimulate greater interest in the welfare of infants and spread hygienic knowledge.

**Personal.**—Dr. J. Solis Cohen has been elected an honorary member of the Philadelphia Laryngological Society.——Dr. Arthur J. Davidson has been appointed orthopedic surgeon to the Jewish Hospital.——Dr. Charles H. Frazier had conferred on him the honorary degree of Doctor of Science, by Hobart College, Geneva, N. Y., recently.——Dr. Frances J. Heath, who is to teach surgery and anatomy in the Union Medical College, Peking, China, has started for her post of duty.——Dr. William Campbell Posey, who has been seriously ill with pneumonia, is very much better and his complete recovery is expected.——Dr. D. Braden Kyle is seriously ill with pneumonia at his home.

**For Greater Efficiency in Hospitals.**—A committee of six members of the Philadelphia County Medical Society presented a report, November 26, recommending a system by which it will be possible to increase the efficiency of hospitals in this city, reduce the cost of maintenance and render a greater aid in the prevention of sickness. The members of this committee are: Drs. Edward Martin, Charles Penrose, George E. De Schweinitz, Wilmer Krusen, John D. McClean, Joseph F. Neff, and Robert LeComte. The plan suggested includes a development of community system for hospital social service. The appointment of efficiency at each hospital, the use of uniform methods of accounting, a preparation of statistics, a development of "follow-up" work, by which the progress of patients toward complete recovery may be known after they have left the hospital. There are nineteen hospitals in this city which have one or more social service workers employed, and instead of increasing the expenditure of the hospital this department makes it possible to discharge a patient at the beginning of convalescence. The report further says: "A hospital is efficient if it performs its functions—the care of the sick, the prevention of disease, the research work and the education of doctors, nurses and the public—thoroughly and with the least possible waste of labor, materials and money. We believe that if the hospitals of Philadelphia should make a united effort to discover and eliminate all of the various forms of preventable waste which undoubtedly exist at the present time it would not only reduce the cost, but greatly increase the efficiency of these institutions." Cooperation of the State Board of Charities is urged, especially in getting hospitals to adopt the uniform system of accounting which has been prepared for the committee by W. B. Hadley, chief accountant in the office of the city controller.

## GENERAL

**Seaboard Physicians to Meet.**—The annual meeting of the Seaboard Medical Association, composed of members of the profession in North Carolina and Virginia, will hold its annual meeting in Norfolk, Va., December 9 to 12, under the presidency of Dr. J. E. Rawls, Suffolk.

**Duluth and Superior Physicians Meet.**—At the Interurban Academy of Medicine held at Superior, November 19, Dr. C. D. Conkey, Superior, was elected president; Dr. C. F. McComb, Duluth, vice-president; Dr. Andres G. Hoyde, Superior, secretary-treasurer, and Dr. Homer Collins, Duluth, censor.

**Southern Medical Women Organize.**—The Association of Southern Medical Women, dedicated to the furtherance of public health campaigns in the South, was inaugurated, November 18, at Lexington, Ky., as an auxiliary to the Southern Medical Society. Dr. Lillian H. South, Bowling Green, Ky., was elected president and Dr. L. Rosa C. Gantt, Spartanburg, S. C., secretary-treasurer.

**Death Abroad.**—In addition to the deaths noted by our correspondent, the following is reported: Edward Nettleship, F.R.C.S., Eng., 1870; F.R.S.; eminent as an ophthalmologist; consulting surgeon to the Royal London Ophthalmic Hospital; consulting ophthalmic surgeon to St. Thomas Hospital; one of the founders, surgical secretary and president of the Ophthalmological Society of the United Kingdom; died at his home in Hindhead, October 30, aged 68.

**Bubonic Plague and Yellow Fever.**—Consul Baker at Guayaquil, Ecuador, reported to the state department under date of

November 6, that there were 112 cases of bubonic plague in Guayaquil and that yellow fever was on the increase. Under date of November 13, fifty-two additional cases were reported at that point.——Under date of November 12, it was reported that the California State Board of Health had ordered the director of the State Hygienic Laboratory to Kennett, in that state, to investigate two cases of reported bubonic plague.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

West Philadelphia Hospital, $5,000 by the will of Emily Sheetz, for the establishment of an emergency free bed.

Germantown Hospital, $5,000 by the will of Isabella T. Camblos.

Mercy Hospital, Kansas City, Mo., a donation of $25,000 by J. L. Loose, contingent on the securing of at least $200,000 to be used as a permanent endowment fund for new buildings.

Good Shepherd Hospital for the Insane, Quebec, $20,000; Jeffrey Hale Hospital $10,000 by the will of Hon. Sharples, Quebec.

St. Michael's Hospital, Toronto, $5,776; Hospital for Incurables $2,000, Hospital for Sick Children $3,000; Toronto General Hospital, $5,000 by the will of Eugene O'Keefe, Toronto.

**Meeting of the Physicians of the South.**—The Southern Medical Association held its seventh annual meeting in Lexington, Ky., November 18 to 20, under the presidency of Dr. Frank A. Jones, Memphis, and elected the following officers: president, Dr. Stuart McGuire, Richmond, Va.; vice-presidents, Dr. J. W. Jervey, Greenville, S. C., and F. H. Clarke, Lexington, Ky.; secretary-treasurer, Dr. Seale Harris, Mobile, Ala. (reelected). Richmond, Va., was selected as the place of meeting for 1914. The following section officers were appointed: Eye, Ear, Nose and Throat—Dr. Homer Du Puy, New Orleans, chairman; Dr. S. Nelson, Memphis, secretary; Hygiene and Preventive Medicine—Dr. R. M. Cunningham, Ensley, Ala., chairman; Dr. W. S. Leathers, University, Miss., secretary.

**The American Association of Immunologists.**—This society was organized June 15 at Minneapolis, Minn., with forty-one charter members, all of whom have been pupils of Sir Almroth E. Wright of London. The objects of the society are: "To unite the physicians of the United States and Canada who are engaged in the scientific study of immunology and bacterial therapy. To study the problems of immunology, and to promote by its concerted efforts scientific research in this department. To spread a correct knowledge of vaccine therapy and immunology among general practitioners." The officers temporarily chosen are: president, Dr. Gerald B. Webb, Colorado Springs, Colo.; vice-president, Dr. George W. Ross, Toronto, Canada; treasurer, Dr. Willard J. Stone, Toledo, Ohio; secretary, Dr. Martin J. Synnott, Montclair, N. J., and council, Drs. A. Parker Hitchens, Glenolden, Pa.; Oscar Berghausen, Cincinnati; J. E. Robinson, Temple, Tex.; Campbell Laidlaw, Ottawa, Canada, and Henry L. Ulrich, Minneapolis. The first annual meeting of the society will be held June 1, 1914, at Atlantic City, N. J.

**Infectious Diseases.**—During the fall the various infectious diseases have been very prevalent throughout the country, in some places small epidemics occurring. Cases of diphtheria and small-pox have perhaps occurred in greatest numbers. For the last week in November diphtheria was reported, among others, from the following places: Hamilton, O., 232 cases; Duluth, Minn., 40 cases, traced to a dairy; La Rue, O.; Hastings, Neb., where one school was closed; Suffield, Conn.; Worcester, Mass.; Antietam Furnace, Md., school closed; La Crosse, Wis., school closed; Detroit, where an antitoxin campaign was urged by the health board; Brenham, Tex., one county school closed; Greencastle, Ind.; Warsaw, Ind.; Waddy, Ky.; St. Paul, Minn., 140 cases during November; one small epidemic was traced to a certain dairy. November 19 the offices of the State Board of Health at Jackson went into voluntary quarantine on account of the discovery of diphtheria infection in the throats of the laboratory staff, caused by the careless sending in of specimens by physicians throughout the state, similarly to the trouble in the state board office in Atlanta, Ga., where a number of cases of the disease occurred, compelling the closing of the office.

Small-pox: At Oklahoma City 12 cases were reported; from Pennsylvania at Johnstown, Altoona, Wilkes-Barre, Reading, Huntington, Bowmanstown and Philadelphia; Milwaukee, Wis., where 21 cases were reported; De Pere, Wis.; Kansas City, Mo.; in the jail at Opelika, Ala., court postponed; Salt Lake City, 29 cases; Niagara Falls, two schools closed; Mt. Horeb, Wis., 14 cases; people defied health board order to vaccinate; Norway, Kan., school closed; Chicago, 11 cases occurred in Bernarr McFadden's "Healthatorium," none of whom had been vaccinated; at Joliet an epidemic with 40 cases occurred.

Measles: Riverbank, Cal., 25 cases in the grammar school; Rickardsville, Iowa, schools closed; Walla Walla, Wash., 50 per cent. of pupils afflicted; at Kodiak, Alaska, and the Afognak Islands, 100 natives have died from epidemic measles.

Scarlet Fever: Sunbury, Pa., 55 cases reported; some schools closed; Thurston, N. Y., schools closed; Paducah, Ky., strict quarantine enforced on account of epidemic; Everett and Malden, Mass., pest-house opened to accommodate the patients; 50 cases in Everett and some schools closed; Wapping, Conn.; Lynchburg, Va., quarantine lifted from the Miller Female Orphanage, where 18 cases but no deaths occurred.

Chicken-pox: Twenty cases reported from Topeka; Canton, Ill.; Wilkes-Barre, Pa.; Little Rock, Ark.

Trachoma: Columbus, Ind., 49 cases reported among schoolchildren in the county; Florin, Cal., 6 cases found among Japanese schoolchildren.

## CANADA

**Personals.**—Dr. Herbert J. Patterson, London, England, addressed the Academy of Medicine, Toronto, the evening of the 24th of November, on stomach surgery.——Dr. Oskar Klotz, professor of pathology and bacteriology, University of Pittsburgh, addressed the Academy of Medicine, Toronto, the evening of the 2nd of December, on "The Triple Alliance—Heart, Kidney and Arterial Disease."

**Infant Mortality in Montreal.**—The infant mortality of Montreal is practically double that of any other city in North America. Montreal with a population of 568,000 had 5,534 infant deaths in 1910, while Toronto with a population of 410,000 had 1,420. In 1912 in Montreal the deaths decreased, numbering 4,835, while in Toronto they increased and amounted to 1,584. The rate per thousand for the three years in Montreal was 9.2, while in Toronto it was 3.6. During the present year up to August 15 there had been registered in Montreal 4,172 infant deaths.

**Hospital News.**—Toronto is considering establishing two new hospitals to serve the east and west ends of that city, the total cost of both institutions to be about $1,000,000. Sites for both have been selected and approved by Dr. Bruce Smith, inspector of hospitals for Ontario and Dr. Chas. J. C. O. Hastings, medical officer of health for Toronto. It is likely that the city will submit by-laws at the coming municipal elections to provide $250,000 as a start for each institution. Dr. Bruce Smith says Toronto needs hospital accommodation for at least 500 more beds.

At the annual meeting of the medical staff and the board of governors of the Western Hospital, Toronto, the medical staff vigorously protested against appointments of three chiefs of clinics made without their consent. Recently a fine new hospital building was completed and arrangements made whereby medical students from the medical department of the University of Toronto would receive clinical instruction. The university authorities required three services of 100 beds each, and it was over the appointment of the heads of these services that the trouble arose. The following officers were elected: Dean of the medical staff, Dr. Elias Clouse; secretary, Dr. Frank Trebilcock; medical superintendent, Dr. James McCullough.——During the year ended September 30, 1,243 patients were treated in the Montreal Maternity Hospital, an increase of 250 patients over the previous year. The benefits of the institution were bestowed on twenty-five nationalities. The staff of nurses now number twenty-one.

## LONDON LETTER

*(From Our Regular Correspondent)*

LONDON, Nov. 15, 1913.

### The London Medico-Psychological Clinic

Excepting at Liverpool there is no clinic in England for the treatment of incipient mental disease. One has just been inaugurated in London termed the London Medico-Psychological Clinic. At the inaugural meeting Lord Sandwich, who was evidently chosen to preside in consequence of his interest in the subject, gave an address in which he "put his foot in it" with a vengeance. Having expressed his belief in the immense power exercised by the mind over the body he said that although he knew nothing of medical science he had had great experience in healing. During the South African War he received sixty officers into his country house and there had never been a doctor or nurse in the place. He himself had acted in both capacities toward his guests and had been both surprised and gratified by his success. There were few serious maladies that he had not treated, and he had never failed to relieve persons in the agonies of pain. He had attended people in palaces, in cottages, in hospitals and in homes. His patients had included a Hindu monk in his monastery, a Mohammedan in his mosque and a Hindu princess who had traveled 500 miles to see him. He had often been asked to explain his power, but he had nothing to explain. He could only say what happened. He was convinced, however, that many other persons possessed similar power, if not to the same extent at least in lesser degree. In the proposed clinic there would be an opportunity for them to exercise it with great usefulness.

Other speakers followed. Miss Constance Long, a woman physician, said that many doctors had successfully practiced psychotherapy, but up to the present there had been no provision for the treatment of the poor. The Medico-Psychological Clinic would supply this and also provide opportunities for investigation of disease. The patients would include persons suffering from depression, insomnia, loss of sensation, the drug habit, morbid attention to bodily ailments, etc. The treatment would consist of persuasion, suggestion, reeducation, psychanalysis, induced sleep and hypnotism. The clinic would not be in opposition to orthodox medicine but supplementary to it, and forces could be joined with medical practitioners in a suitable building. Dr. Spearman, professor of psychology at University College, said there could be no doubt that science would gain from the formation of the new clinic. There was a growing interest in and demand for psychotherapy which could not be disregarded. Some years ago the subject had been treated with derision, but to-day this had ceased, and knowledge had been gained. Dr. Maurice Craig, F.R.C.P., physician for mental diseases and lecturer to Guy's Hospital, a well-known alienist, said that there was no proper provision in England for patients suffering from incipient mental disorder. They were left to struggle on until ready to be admitted into lunatic asylums, though a little timely treatment would have restored them. These unfortunates were by no means always the derelicts of society, but were frequently highly endowed and gifted.

As might be expected, the extraordinary claims of the chairman, a layman, to marvelous healing powers at a meeting in which the cooperation of the profession was necessary, had a sequel. The physicians concerned have written to the press saying that they had been compelled to dissociate themselves from the occult powers claimed by Lord Sandwich, who has terminated his association with the clinic. They add that they profess nothing but ordinary medical knowledge acquired in the ordinary way, and hope that the clinic will attract the physicians who wish to learn practical psychotherapy. The whole of the healing art was cradled in superstition, and in the minds of many psychotherapy is still tinged with charlatanism from which the clinic would help to dissociate it.

### Tuberculosis among Natives of South Africa

A parallel to the prevalence of tuberculosis among the negroes of the United States seems to be coming into existence in South Africa, where the same race is being brought into contact with European civilization. At the recent meeting of the South African Medical Congress Dr. D. Melville, who has for sixteen years resided in the heart of the "native territories" and acquired considerable knowledge of the manners and customs of the natives, said that deaths from tuberculosis occurred at all ages among the natives, excepting children. and were particularly frequent among young adults. The disease appeared to be responsible for a decline in the native population. A rapid increase of this population was noted in the census of 1904, but was not maintained in 1911, and a further drop would be shown in 1921. In three districts, which he knew well, the census gave the total native population as 81,272 in 1891 and 104,346 in 1904—an increase of 23,074, at the rate of 1,775 per annum. In 1911 the population was 110,358, an increase of 6,012, at the rate of 858 per annum. Thus the rate of increase had fallen by one-half, though during the period referred to the birth-rate had remained stationary. Tuberculosis was undoubtedly on the increase, for on going over the first 3,000 cases he treated in 1897 only 1 per cent. were found to be tuberculous, while the first 3,000 cases treated in 1912 showed 40 per cent. of tuberculosis. Of the tuberculous affections lung disease was easily first and glandular disease second, while affections of bones and joints were not numerous. The natives could be divided into two great classes—the red or blanket Kaffir, and the dressed Kaffir who adopted European clothing. In 1897 tuberculosis was much less prevalent in the blanket Kaffir, and this still held good but not to the same degree. In the overcrowded, dark, dirty and damp huts, never ventilated and never open to the sunlight, the disease was propagated. Where could the bacillus find better conditions for growth? Natives were great smokers, spit freely on the floors, and one pipe was passed from one to another.

### The Bacteriology of Food-Poisoning

In a report to the local government board Dr. Savage communicated some important observations on "ptomain poisoning," as it used to be called, but which modern investigation is showing to be due to bacterial infection. Dr. Savage points out that the bacteria concerned in food infections can be included roughly in three groups: (*a*) the Gaertner group of bacilli, (*b*) non-Gaertner aerobic bacilli, such as *Bacillus proteus* and *B. coli*, and (*c*) *B. botulinus*. In the majority of recorded outbreaks of food-poisoning in which fatal cases have occurred, one or other of the Gaertner group of bacilli seems to have been the infecting organism. The Gaertner group of bacilli is a subgroup of the large coli-typhoid group, its members occupying an intermediate position between the chemically active coli group and the chemically inert typhoid group, and consisting of (1) *B. enteritidis*, which includes not only many of the Gaertner bacilli isolated in cases of food poisoning but also many of the strains of *B. typhi murium;* (2) *B. suipestifer*, with which one must associate some of the *B. typhi murium* strains, probably *B. psittacosis*, and (3) *B. paratyphosus* B. Sausage and ham are the commonest two sources of botulism. From the anaerobic character of the bacillus and the fact that outbreaks of botulism have never followed the eating of food in a fresh state, botulism must be produced by an invasion of food by *B. botulinus* only when suitable anaerobic conditions are provided, for example, when a ham is stored at the bottom of a pickling cask and entirely covered by the pickling solution. Van Ermengem states that the disease has never occurred when the food has been properly cooked as *B. botulinus* and its toxins are easily destroyed by heating. The *B. botulinus* will not grow in mediums containing more than 6 per cent. of sodium chlorid and it is unlikely, therefore, that any meat would develop *B. botulinus*, even if stored under anaerobic conditions, if a pickling solution containing 15 per cent. of salt were used.

## PARIS LETTER

*(From Our Regular Correspondent)*

Paris, Nov. 13, 1913.

### Centenary of the Discovery of Iodin

November 9 the centenary of the discovery of iodin was celebrated. It was in November, 1813, that Bernard Courtois, who was born Feb. 15, 1777, at Dijon, read before the Académie des sciences a note entitled "Discovery of a New Substance in Sea-Wrack." Many scientific and medical men of prominence went to Dijon to take part in the celebration. A commemorative tablet was placed on the house in which Bernard Courtois was born. Afterward a session was held in the hall of the Académie de Dijon. Camille Matignon, professor of inorganic chemistry at the College of France, read an interesting paper on the discovery of iodin. During the troublous times of the eighteenth century the problem of nitrogen, or rather of potassium nitrate, demanded the attention of nations and of chemists. The old gunpowder was a mixture of potassium nitrate, sulphur and carbon, but the potassium nitrate constituted three-fourths of the mixture. The natural supply of saltpeter was insufficient for the needs of the various nations. A *salpêtrière* (manufactory of saltpeter) was founded at Dijon, and in the preparation of saltpeter Bernard Courtois noted, during the evaporation of the solution of sodium nitrate leached from the ashes of marine plants, that the copper caldrons used for the operation soon became perforated. In trying to find out the cause, he found that the copper combined with a substance the nature of which was unknown to him. He was able to isolate from the mother-waters of sea-wrack soda a new substance to which Gay-Lussac gave the name of "iodin." The first therapeutic application of iodin was made by Coindet of Geneva in 1820. He published a memoir on the discovery of a new remedy for goiter. From 1830 to 1840 the iodin industry was founded. More than twelve hundred families along the shore of the Cottentin and of Brittany were occupied in gathering, drying, grinding and burning sea-weeds. Later iodin was obtained from the saltpeter of Chile, and the rich layers of potassium and bromin salts from Stassfürt. To-day the greatest part of the iodin consumed comes from Chile. While in 1875 the production of iodin throughout the world did not exceed 250,000 kg., it had risen in 1900 to 590,000 kg., and of late amounts to about 450,000 kg. France produces only about 59,000 kg.

### Dangerous Colon Reactions

November 11, Dr. Albert Mathieu, physician of the hospitals of Paris, read before the Académie de médecine a paper on colic reactions. Under this name he designates reflex phenomena of colonic and sigmoidorectal origin which, under their most simple aspect, take the form of nauseas, vomitings, vertigoes or fainting, occurring among constipated persons at the time of an evacuation of the bowels after a period of several days of fecal retention. In some cases the complications occur at each such crisis, and sometimes are serious. Thus, in a young girl of 23 the vomiting had caused suspicion of the existence of chronic appendicitis, and the appendix had been removed. Later, the existence of a gastric or duodenal ulcer had been suspected. Moreover, there had been a hematemesis a year before that. One day, after a glycerinated enema, at the very moment of dejection, there occurred abruptly a sharp abdominal pain, vomiting, a serious condition of collapse with cold extremities, facies abdominalis and a rapid filiform pulse, so that a gastric perforation was feared. An exploratory laparotomy performed three hours later showed that there was no such perforation. Only adhesions were found and a duodenal scar, no doubt the results of former ulcers. A gastro-enterostomy was performed. A month later there was a similar crisis following another such dejection. In another case, that of a woman under treatment for chronic colitis, there was a serious collapse following a mucilaginous injection to which zinc oxid and bismuth subgallate were added, according to the formula used by the Mathieu service. The collapse was combated by injections of caffein and lasted three hours.

### A Medal Presented to Dr. Roux

To-morrow the twenty-fifth anniversary of the foundation of the Pasteur Institute will be celebrated in the presence of the President of the Republic (The Journal, Oct. 4, 1913, p. 1307). The pupils and friends of Dr. Roux, director of the institute, have arranged to present him before the celebration with a medal bearing his own portrait.

### Honor to the Memory of Dr. Lucas-Championnière

A petition to have a street in Paris named after Dr. Lucas-Championnière has received the signatures of all the members of the Académie de médecine to which it has been presented. The same proposition was made in the municipal council at the last session and was reported on favorably.

### *A Limitation of the Number of Licenses for the Sale of Liquor*

In several departments, the prefects have forbidden giving licenses for the sale of liquors within a certain radius from 200 to 300 meters around churches, schools, cemeteries, barracks and hospitals.

## BERLIN LETTER

*(From Our Regular Correspondent)*

Berlin, Nov. 14, 1913.

### Personal

Professor Doutrelepont of Bonn, who was formerly director of the dermatologic clinic, celebrated, October 26, the fiftieth anniversary of his doctorate.

Professor Morawitz of Freiburg has received a call to Greifswald as director of the medical clinic.

Professor Hotz of Würzburg has gone to Freiburg as successor of the deceased Professor Goldmann.

November 6, Professor Trautmann, department head at the Hygienic Institute of Hamburg, died after a short illness at the age of 38. He had published numerous articles on meat poisoning, plague, meningitis, sterilization of milk, etc.

November 5, Professor Ponfick, formerly manager of the Pathologic Institute at Breslau, died at the age of 69. He was born Nov. 3, 1844, at Frankfort a.M., and after studying at Tübingen, Freiburg and Heidelberg, he became first an assistant of C. O. Weber, the Heidelberg surgeon, and afterward went to Recklinghausen at Würzburg for pathologic study, and came in 1868 to Berlin as assistant to Virchow in the Pathologic Institute. From here he was called to Rostock as regular professor in 1873. His work as professor was interrupted for some time by a journey of investigation which he made to Egypt, Nubia and Palestine as companion of the hereditary grand duke of Mecklenburg. In 1876 he accepted a call to Göttingen, and from there in 1878 he went to Breslau, where he acted as director of the Pathologic Institute until the spring of this year.

He was prominent as a teacher at the Breslau University, and as a scientist he published a large number of important articles. Among these is a series on transfusion, especially on the changes that the blood of a sheep undergoes when introduced into the circulation of man. He also wrote on mushroom poisoning and on the pathology of the liver and pancreas, on myxedema, on middle ear disease in small children, and on actinomycosis, which was at that time a new infectious disease.

The editor of the *Berliner klinische Wochenschrift*, Dr. Hans Kohn, has received the title of professor.

Professor Schuchardt, director of the nerve clinic at Rostock, died November 7, aged 66. He was assistant at the medical clinic at Strasburg under Leyden and Kussmaul, and later became a member of the faculty at Bonn as assistant in the psychiatric clinic. In 1895 he was elected professor of psychiatry at Rostock. His works are concerned with his specialty, particularly with the public care of the insane.

### The Eleventh German Conference on Tuberculosis

The eleventh tuberculosis conference under the patronage of the empress began October 22 in the Parliament House in Berlin.

#### SPECIAL TUBERCULOSIS DISPENSARIES

The first subject discussed was the special tuberculosis dispensaries (Fürsorgestellen für Lungenkranke). In the discussion, much interesting matter was presented with reference to the organization of tuberculosis dispensaries in different countries, such as Sweden, where the care of tuberculosis is far advanced, and Austria, where they are just beginning to lay a greater stress on this question. It was further discussed whether the physician connected with the special dispensary should be at the same time the director. The opinion of the conference inclined to the view that in the smaller places the physician may readily direct the technical matters and the details of the management, but in larger cities it is better to have a special official to take charge of these matters. This is especially favorable in bureaus established by the community where the medical representative of the city government may act at the same time as the chairman of the assistance bureau.

One of the representatives of the Krankenkassen warned against expecting the insurance societies to devote more and larger sums to the prophylaxis of tuberculosis; the Krankenkassen have so many demands of this sort that unless the fees are raised, any additional efforts on their part along this line are scarcely to be thought of.

#### SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

Professor Brauer of Hamburg said that in the surgical treatment of tuberculosis a number of measures have given little result. On the other hand, the treatment of pulmonary tuberculosis by rest and compression of the lung tissue has proved successful. This is accomplished either by an artificial pneumothorax or by a plastic operation to reduce the size of the thorax. The simplest measure, when the pleural cavity is free, is the injection of air between the costal pleura and the lung, a measure which of late years has been widely adopted and with a careful selection of patients and proper technic has proved very useful and relatively free from danger. In case of pleural adhesions, various operative measures may be considered: circumscribed depression of the thorax wall, the purpose of which is to promote the already existing tendency of the lung to shrivel; the extensive extrapleural thoracoplasty recommended by Brauer, or the method of intrapleural thoracoplasty (Schede). It is very important that the indications be very strictly followed in regard to the general condition of the patient, complications, and especially the condition of the lung of the other side. Partial collapse and immobilization of the lung may be secured, aside from the Quincke-Spengler partial extrapleural thoracoplasty, by the freeing of the adherent apex of the lung. This procedure is especially successful by the method of Tuffier of Paris. He fills the space left by the liberation and depression of the upper lobe by implanting living adipose tissue. The process of Baer of Davos founded on this method attempts to fill the space by the injection of paraffin. This method is somewhat dangerous but may under some circumstances lead to good results. The paralysis of the diaphragm by cutting the nerve immobilizes the lower segments of the lung. Especially as a supplement to extrapleural thoracoplasty, benefit may be derived by this technic, as Sauerbach, Oelecker and others have shown. Brauer said in conclusion that one should not be led to overestimate the value of the method in consequence of the good results in individual cases, and, further, that the careful selection of suitable cases must be emphasized.

## Marriages

George Driver Brogaw, M.D., Pilares de Nacozari, Sonora, Mexico, to Miss Margaret Butler of Washington, D. C., November 18.

Wilhelm Ludwig Baum, M.D., to Mrs. Mervyn Winston Lawrence, both of Chicago, in New York City, November 24.

Corbin Jay Decker, M.D., U. S. N. (ret.) Philadelphia, to Miss Katherine Mason of Asheville, N. C., December 3.

Joseph D. Ely, M.D., Hudson, Mich., to Mrs. Ellen Ford Van Buskirk of Fayette, Ohio, at Toledo, November 8.

Arthur Woodward Booth, M.D., Elmira, N. Y., to Miss Jeannette Van Cleef of Ithaca, N. Y., November 19.

Andrew Culloden Panton, M.D., to Mrs. Florence Merges Carlock, both of Portland, Ore., November 15.

Harold T. Allison, M.D., Heppner, Ore., to Miss Olive J. Lockwood of Portland, Ore., November 16.

William Roy Van Duzer, M.D., Pasey, Iowa, to Miss Nora J. Brinton of Stuart, Iowa, November 20.

John Clifton Anthony, M.D., Birmingham, Ala., to Miss Mae Smith of Ozark, Ala., November 19.

Samuel Greenburg, M.D., to Miss Anna Ruth Matzkin, both of Brooklyn, N. Y., November 11.

Harry Troy Evans, M.D., Springfield, Mo., to Miss Edna F. Mann of St. Louis, November 17.

John C. McClenathan, M.D., to Miss Della Barnes, both of Connellsville, Pa., November 24.

Calvin Randolph Marshall, M.D., to Miss Grace Loomis, both of Indianapolis, November 15.

Charles E. Fawcett, M.D., to Mrs. Mabel Slater, both of Stewartville, Minn., November 19.

Olive M. Slate, M.D., Spokane, Wash., and John J. Maeny of Plains, Mont., November 18.

Ephraim Kirkpatrick Findlay, M.D., to Miss Irene Nelson, both of Chicago, October 22.

## Deaths

**Robert Lee Edwards, M.D.** New York University, New York City, 1894; a Fellow of the American Medical Association; formerly assistant in surgery in Cornell Medical College, New York City; later local surgeon of the Atlantic Coast Line Railroad at Darlington, S. C.; for the last six years a resident of Richmond, Va.; owner and physician in charge of the Southern Sanitarium; ophthalmologist, otologist and laryngologist to the Johnston Willis Sanitarium; died at his home in Richmond, November 12, from heart disease, aged 42.

**Charles Mayrant Rees, M.D.** Medical College of the State of South Carolina, Charleston, 1887; a Fellow of the American Medical Association; formerly professor of gynecology and obstetrics in the Charleston Medical School; professor of general and clinical surgery in his alma mater; first lieutenant, Medical Reserve Corps, U. S. Army; formerly president of the South Carolina Medical Association; died at his home in Charleston, November 15, aged 51.

**William Kendall Newcomb, M.D.** Rush Medical College, 1882; a Fellow of the American Medical Association; president of the Illinois State Medical Society in 1911, and once president of the Aesculapian Society of the Wabash Valley; one of the most esteemed and beloved practitioners of Central Illinois; attending physician to the Julia F. Burnham Hospital, Champaign; died at his home, November 25, from pneumonia, aged 56.

**Terence Lathrop Carroll, M.D.** Albany (N. Y.) Medical College, 1885; a member of the Medical Society of the State of New York; physician to the Albany Penitentiary; attending physician to St. Peter's Hospital and the South End Dispensary; died at his home in Albany, November 9, aged 49. Memorial services in honor of Dr. Carroll were held by the Albany County Medical Society, November 11.

**Russell F. Goodwin, M.D.** Rush Medical College, 1870; for many years proprietor of a sanatorium in Minneapolis; died in St. Barnabas Hospital in that city, November 15, aged 71, from injuries received two days before when he was struck by an automobile while attempting to board a street car.

**Charles Sumner Collins, M.D.** Boston University, 1875; formerly a member of the State Board of Health of New Hampshire and State Board of Lunacy and Charity; for several years a member of the state legislature; president of the Nashua Board of Education for twelve years and also president of the Nashua Board of Trade; died at his home, November 16, aged 60.

**Douglas Ayres, M.D.** Albany (N. Y.) Medical College, 1865; a Fellow of the American Medical Association; once president and first vice-president of the Medical Society of the State of New York; of the Montgomery County Medical Society; for many years president of the Board of Education of Fort Plain, N. Y.; died at his home, November 20, from myocarditis, aged 71.

**Lucien LaBland Brainard, M.D.** New York Homeopathic Medical College, New York City, 1874; a Fellow of the American Medical Association; for many years a member of the consulting staff of the Faxton Hospital, Utica, N. Y.; vice-president of the Little Falls (N. Y.) National Bank; died suddenly at his home in that city, November 18, from heart disease, aged 60.

**Henry Harrison Forline, M.D.** Kentucky School of Medicine, Louisville, 1861; Beaumont Hospital Medical College, St. Louis, 1887; formerly surgeon for the Missouri, Kansas and Texas Railroad, and while a resident of Chicago consulting physician to the Western Springs Sanitarium; died at his home in Los Angeles, August 8, from arteriosclerosis, aged 72.

**Edward Francis Denner, M.D.** College of Physicians and Surgeons, New York City, 1894; a member of the Medical Society of New Jersey and a leading practitioner of Paterson; for several years associate and consulting surgeon to St. Joseph's Hospital; died in that institution, November 14, from typhoid fever, aged 41.

**James H. McClelland, M.D.** Hahnemann Medical College, Philadelphia, 1867; president of the American Institute of Homeopathy in 1893-1894; professor of surgery in his alma mater in 1876 and 1877; president of the State Board of Health in 1895; died at his home in Pittsburgh, November 13, from heart disease, aged 68.

**Zachariah Taylor Miller, M.D.** Hahnemann Medical College, Philadelphia, 1877; a veteran of the Civil War; for many years professor of artistic anatomy in the Carnegie Institute of Technology; a member of the staff of the Pittsburgh Homeopathic Hospital; died at his home, November 14, from angina pectoris, aged 66.

**Simon James O'Neil, M.D.** New York University, New York City, 1887; formerly assistant in the department of obstetrics in his alma mater; for twenty years physician to the Rockaway Institute and House of the Good Shepherd, New York City; died at a hotel in Long Beach, November 14, from heart disease, aged 52.

**Henry Clay Beall, M.D.** Missouri Medical College, St. Louis, 1880; a Confederate veteran; for thirty-four years a practitioner of Carroll, Mo., and for ten years thereafter a resident of Cortez, Colo.; died at the home of his daughter in DeWitt, Mo., November 7, from pneumonia, aged 70.

**James Edwin Ray, M.D.** University of Pennsylvania, Philadelphia, 1860; a member of the Colorado State Medical Society; a pioneer practitioner of Crowley County, and a resident of Sugar City for fifty-six years; died in St. Mary's Hospital, Pueblo, November 12, from heart disease, aged 77.

**William Shippen, M.D.** Medical College of Virginia, Richmond, 1887; a member of the Medical Society of Virginia; for twenty years acting assistant surgeon in the Army; later city physician of Petersburg, Va.; died in the Petersburg Hospital, November 17, aged 52.

**Edwin R. Schwinn, M.D.** Chicago College of Medicine and Surgery, 1912; of Wheeling, W. Va.; aged 23; who went to Houston, Tex., to take the examination for license to practice medicine in that state, choked and died in that city, November 8, while eating supper.

**Edgar Clarence Collins, M.D.** Albany (N. Y.) Medical College, 1880; a Fellow of the American Medical Association; proprietor of the Collins Emergency Hospital, Springfield, Mass.; died in that institution, November 14, from angina pectoris, aged 55.

**W. Frank Clopton, M.D.** Tulane University, New Orleans, 1872; physician, cotton, planter, banker, head of the W. F. Clopton Mercantile Company and president of the police jury of St. Landry Parish, La.; died at his home in Morrow, November 18.

**John Kemper, M.D.** Illinois Army Board, 1864; Long Island College Hospital, Brooklyn, N. Y., 1867; surgeon of the Twenty-Eighth Illinois Volunteer Infantry during the Civil War; died at his home in Galesburg, Ill., November 28, aged 80.

**Charles E. Boult, M.D.** University of Buffalo, N. Y., 1892; president of the Board of Education of Honeoye Falls, N. Y., and one of the coroner's physicians of Monroe County; died suddenly at his home, November 7, from heart disease, aged 54.

**Albert W. Hendricks, M.D.** Eclectic Medical College of Pennsylvania, Philadelphia, 1871; one of the founders, and for many years surgeon, of the Home for Old Soldiers, Philadelphia; died at the home of his daughter in that city, November 19.

**John McIntyre Morrison, M.D.** Cooper Medical College, San Francisco, 1895; formerly a practitioner of Richmond and Loyalton, Cal.; died in the Roosevelt Hospital, Berkeley, Cal., November 16, from carcinoma of the stomach, aged 42.

**James Randolph Medlock, M.D.** Washington University Medical School, St. Louis, 1875; a Fellow of the American Medical Association; died suddenly at his home in Santa Ana, Cal., November 11, from cerebral hemorrhage, aged 76.

**Carl Fisch, M.D.** Missouri Medical College, St. Louis, 1893; a Fellow of the American Medical Association and a well-known pathologist and bacteriologist of St. Louis; died at his home, November 17, after a long illness, aged 54.

**William P. Jones, M.D.** Philadelphia University of Medicine and Surgery, 1861; assistant surgeon of the Forty-Second Pennsylvania Volunteer Infantry during the Civil War; died at his home in Philadelphia, November 18, aged 76.

**A. J. Clements, M.D.** University of Nashville, Tenn., 1858; for many years a practitioner of Glasgow, Ky.; a member of congress from Tennessee during President Lincoln's administration; died November 7, from pneumonia, aged 79.

**Philip Francis Xavier Ryan, M.D.** College of Physicians and Surgeons, New York City, 1901; for five years a medical examiner for the New York Life Insurance Company; died at his home in New York City, November 17, aged 37.

**Edward L. Braun, M.D.** Philadelphia College of Medicine and Surgery; for many years an alderman of Pittsburgh, Northside, but for five years a resident of Detroit; died at his home in that city, November 5, aged 58.

**Adolph J. Broell, M.D.** Northwestern University Medical School, 1892; of Chicago; a Fellow of the American Medical Association; died in the German-American Hospital, Chicago, November 30, from typhoid fever, aged 43.

**Frederick R. Hunt, M.D.** Northwestern University Medical School, Chicago, 1888; for several years a practitioner of Austin, Chicago; died suddenly at his home in California, August 30, from angina pectoris, aged 52.

**Thomas Hanson** (license, Ontario, 1891); a graduate of Victoria College, Medical Department, Coburg, Ont., in 1864; when too young to receive a degree; died at his home in Kenora, Ont., September 30, aged 67.

**James S. McFarland, M.D.** University of Edinburgh, Scotland, 1850; M.R.C.S., Edinburgh, 1850; for four and a half years a surgeon in the English Army; died at his home in Oil City, Pa., November 13, aged 80.

**David M. Nottingham, M.D.** Hahnemann Medical College, Chicago, 1881; formerly a member of the Michigan State Legislature; died at his home in East Lansing, Mich., November 11, from heart disease, aged 58.

**John Harvey Hill, M.D.** University of Pennsylvania, Philadelphia, 1867; a veteran of the Civil War; an expert on small-pox; died in his apartment in Baltimore, November 10, from ptomain poisoning, aged 70.

**Nelson B. Lafferty, M.D.** Starling Medical College, Columbus, Ohio, 1863; a member of the Ohio State Medical Association; a veteran of the Civil War; died at his home in Hillsboro, November 9, aged 73.

**John Walter Poston, M.D.** Eclectic Medical Institute, Cincinnati, 1873; Memphis Hospital Medical College, 1882; died at his home in Maury City, Tenn., about November 5, aged 63.

**Clarence T. Pope, M.D.** Louisville (Ky.) Medical College, 1873; for more than forty years a practitioner of Louisville; died at his home, November 13, aged 61.

**Paul Newlon, M.D.** University Medical College, Kansas City, Mo., 1908; died at his home in Lincoln, Kan., September 25, from typhoid fever, aged 29.

**Maria Gutterman Graff Scott, M.D.** University of Heidelberg, 1862; said to have been the first woman to practice medicine in Louisville; died at her home, November 13, from arteriosclerosis, aged 73.

**Lionel E. Bratton, M.D.** Memphis Hospital Medical College, 1896; University of Louisville (Ky.) 1900; a practitioner of Arkansas for twenty-five years; died at his home in Atkins, November 18, aged 49.

**James A. Koehler, M.D.** Ohio Medical University, Columbus, 1898; a Fellow of the American Medical Association; died at his home in Shelby, Ohio, November 13, from pernicious anemia, aged 40.

**Samuel S. Lytle, M.D.** University of Iowa, Iowa City, 1878; a pioneer member of the faculty of his alma mater; a veteran of the Civil War; died at his home in Iowa City, November 8, aged 71.

**Carl Lyle Hobson, M.D.** University of Pennsylvania, Philadelphia, 1910; a member of the Iowa State Medical Society, died at his home in Hampton, Iowa, November 14, from pneumonia, aged 27.

**Theophile A. Lafferty, M.D.** Michigan College of Medicine and Surgery, Detroit, 1903; of Detroit; died in the psychopathic ward of St. Mary's Hospital in that city, November 12, aged 34.

**Charles Ferdinand Durand, M.D.** University of Toronto, Ont., 1882; formerly acting medical superintendent of the Municipal Hospital, Buffalo; died in Toronto, November 10, from pneumonia.

**Charles Roy Stewart, M.D.** University of Nebraska, Lincoln, 1910; of Curtis, Neb.; was crushed under his overturned automobile near Curtis, November 2, and instantly killed, aged 27.

**William Pennington Mullin, M.D.** Hahnemann Medical College, Philadelphia, 1881; of Chestnut Hill, Philadelphia; died in St. Luke's Hospital in that city, November 14, aged 52.

**John B. Longshere, M.D.** Pennsylvania Medical College, Gettysburg, 1846; one of the oldest practitioners of New Jersey; died at his home in Camden, November 10, aged 92.

**Daniel B. Bobb, M.D.** Northwestern University Medical School, Chicago, 1864; for nearly half a century a practitioner of Dakota, Ill.; died at his home, November 14, aged 76.

**John Lawson Fleming, M.D.** University of Tennessee, Nashville, 1894; of Goodwin, Ark.; died in the Baptist Hospital, Memphis, October 19, from tetanus, aged 47.

**Christopher C. Hiatt** (license, Indiana, 1897); of Muncie, Ind.; a veteran of the Civil War; died in the Soldiers' Home, Lafayette, Ind., November 8, aged 83.

**Carl A. Coburn** (license, years of practice, Michigan, 1900); for about 40 years a practitioner of Michigan; died at his home in Homer, November 6, aged 73.

**George Bassett Sawtelle, M.D.** Hahnemann Medical College, Philadelphia, 1866; died at his home in Malden, Mass., November 14, from heart disease, aged 75.

**Ezekiel McNair, M.D.** Medical College of Georgia, Augusta, 1876; died at his home in Jeffersonville, Ga., September 16, from cerebral hemorrhage, aged 66.

**William Roscoe Dell, M.D.** Milwaukee Medical College, 1904; of Marinette, Wis.; died in a sanitarium in Kenosha, November 20, from nephritis, aged 34.

**Daniel Whitfield Carroll, M.D.** Vanderbilt University, Nashville, 1913; died at his home in Brock, Okla., October 28, from typhoid fever, aged 22.

**Lucien B. Abney, M.D.** Medical College of Ohio, Cincinnati, 1861; died at his home in Elizaville, Ky., November 6, aged 78.

**Denis Morin, M.D.** Hahnemann Medical College, Chicago, 1884; died at his home in Chicago, November 14, aged 72.

**Thomas Mahon Armstrong, M.D.** Victoria University, Coburg, Ont, 1860; died in Lloydtown, Ont., October 5, aged 76.

**Edward Roscoe Miller, M.D.** Boston University, 1887; died at his home in Leominster, Mass., October 17, aged 54.

**Arthur Marks, M.D.** Toledo (Ohio) Medical College, 1910; died at his home in Toledo, October 18, aged 31.

**Hiram Raleigh Kennedy, M.D.** University of Louisville, 1880; died at his home in Green Hill, Ala., October 8.

**Edward J. Fischer, M.D.** Rush Medical College, 1880; died at his home in Chicago, November 7, aged 65.

**George William Spears, M.D.** Boston University, 1876; died at his home in Boston, October 30.

**Frank G. Kimbrough, M.D.** University of Alabama, Mobile, 1890; died at his home in Salado, Tex., November 7.

# The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

## THE LACTIC ACID FERMENT PREPARATIONS IN N. N. R.

### Report of the Council on Pharmacy and Chemistry

The following report on the quality of the market-supply of the lactic acid ferment preparations described in New and Nonofficial Remedies has been authorized for publication.

W. A. PUCKNER, Secretary.

The frequently made assertions that the lactic acid ferment preparations on the market are worthless made it important to determine the quality of those admitted to New and Nonofficial Remedies. A control of these products appeared all the more desirable because past examinations of the market-supply showed these preparations to be most unreliable (THE JOURNAL Jan. 30, 1909, p. 372), and because their very nature makes deterioration likely.

Orders for one package of each of the lactic acid ferment preparations admitted to New and Nonofficial Remedies were therefore sent to three prescription pharmacists—one each in Chicago, Detroit and Indianapolis—with the request to take these from stock or to purchase them in the regular way. Also, specimens were ordered direct from the manufacturer.

None of the pharmacists could supply either bacillary milk or lactampoules. In answer to an inquiry the manufacturer states that so far these products are supplied direct only. One pharmacist sent a specimen of the Fairchild Culture of Bacillus Bulgaricus, and as this product had been sent to the council for inclusion with New and Nonofficial Remedies this specimen, and one sent by the manufacturer, were also included in the examination. Altogether, the following specimens were sent to the council's expert:

Fairchild Culture of Bacillus Bulgaricus, Fairchild Bros. & Foster. One specimen from manufacturer and one from pharmacist.

Lactic bacillary tablets, Fairchild Bros. & Foster. One specimen from manufacturer and three from pharmacists.

Lactampoules, Fairchild Bros. & Foster. One specimen from manufacturer.

Bacillary milk, Fairchild Bros. & Foster. One specimen from manufacturer.

Bulgara tablets, Hynson, Westcott & Co. Two specimens from manufacturer and three from pharmacists.

Massolin, Schieffelin & Co One specimen from manufacturer and two from pharmacists.

The following is the result of the investigation:

1. Preparations of Fairchild Bros. & Foster.

The Fairchild Culture of Bacillus Bulgaricus. Two samples were examined. These were both pure cultures and the bacilli were in good viable condition. The reactions on litmus-milk were typical. Sterilized milk coagulated promptly in less than twenty-four hours, forming a good, smooth, typical coagulum. Microscopic examination of the original culture, and the milk inoculated with the original culture, showed Bulgarian bacilli in pure culture.

The Fairchild lactic bacillary tablets. Four specimens were examined. The bacilli were not in so viable a condition as in the liquid culture. They worked more slowly and a few other bacteria got in, no doubt owing to lodgment on the tablets. Four tablets (not crushed) did not curdle sterile milk after forty-eight hours. In litmus-milk only slight acidity was developed after forty-eight hours. Microscopic examination of this litmus-milk, however, showed only Bulgarian bacilli, although relatively few in number.

Fairchild's lactampoules. These showed the same reactions as the Culture of Bacillus Bulgaricus. Milk was promptly coagulated. Acid formation and coagulation in litmus-milk were typical. Microscopic examination showed the bacilli in pure culture.

Fairchild's bacillary milk. One sample was examined. It had the typical taste, consistency, etc., produced by Bulgarian bacilli in milk. Microscopic examination showed Bulgarian bacilli in pure culture, and inoculation of sterile milk produced typical coagulum, taste and appearance.

2. Preparation of Hynson, Westcott & Co., Bulgara Tablets.

Five original packages of these tablets were examined. The tablets contained pure cultures of Bulgarian bacilli as shown by microscopic examination. In litmus-milk typical curd and acid reactions were produced. Inoculations into sterile milk produced typical coagulum, with very little whey and characteristic taste and appearance. The action was somewhat slower, however, than is produced by liquid cultures. All five samples acted exactly alike.

3. Massolin, prepared by Lederle Laboratories and marketed by Schieffelin & Co.

Three samples of Massolin were examined. They contained pure cultures of Bulgarian bacilli in liquid form. The action was very prompt, more so than any of the other samples of commercial articles examined. Litmus-milk curdled and was acidified in typical fashion. Microscopic examination showed the bacilli to be in pure culture.

Explanation: Typical coagulum produced by Bulgarian bacilli should be smooth, with little or no whey. In litmus-milk the litmus is decolorized, excepting a ring at the top, which is intensely red. Most races produce practically no whey, although certain races produce some. There should never be much whey.

This report shows that while the market-supply—at least that examined in 1909—was highly contaminated, the products described in New and Nonofficial Remedies without exception contain only the *Bacillus bulgaricus*. Further, while all products containing living bacteria are bound to deteriorate, the preparations examined were in viable condition, though, as was to be expected, liquid cultures were more active than the tablet preparations.

In this connection it should be pointed out that besides placing an expiring date on each package, the manufacturers of these products are making every effort to insure the dispensing of reliable products when they are ordered by physicians. These manufacturers have urged pharmacists to keep the lactic acid preparations in ice-boxes or refrigerators, to purchase only a limited supply and in other ways to give special attention to their dispensing as directly as possible from the laboratories of the manufacturers. Physicians should examine the date on the label to be sure the preparation is not too old.

## WHAT'S THE MATTER WITH ILLINOIS?

The *Illinois Medical Journal* has come tumbling down the ladder of progress and joined the ranks of the obstructionists. The number of advertising pages have increased accordingly. But what will the 5,000 members, the large majority of whom, we are convinced, stand for the principle that the State Association and its publications shall uphold the standards of organized medicine, including the rules of the Council on Pharmacy and Chemistry governing advertisements, think of the backward step which their journal has forced them into?

Perhaps there is no more pitiable spectacle in the battle of life than lowering your standard and acknowledging defeat after exhausting all your resources in maintaining a principle. There is no disgrace attached to the conclusion of an issue honestly fought, but when a leader deliberately surrenders his people to the opposing forces while still well armed and eager for battle, he is guilty of a treasonable act and ought to be dealt with accordingly. The *Illinois Medical Journal* until very recently stood for the principles of our organization and its pages were free from objectionable advertisements. With the change in management (it has no editor) comes a disgraceful acknowledgment that it will accept and publish advertisements of articles irrespective of the findings of the Council on Pharmacy and Chemistry concerning the honesty and reliability of those articles. Will the Illinois State Medical Association permit its journal to be prostituted in this disgraceful manner after fighting for years to be consistent, respectable and ethical?—*The Journal of the Missouri State Medical Association, November, 1913.*

## SANATOGEN

### A Restatement of the Case Against This Product

The case against Sanatogen has been pretty plainly given at different times in The Journal,[1] but the sale of the stuff goes on—thanks to the power of advertising. One criticism that has been made of this patent medicine is the exorbitant price charged for it. This objection, although but an incidental one, is the one that apparently appeals to the layman more strongly than the much more serious criticism, fraud in exploitation. You arrest the attention of the average man when you appeal to his purse; he resents paying an exorbitant price for anything. This probably accounts for the fact that this particular criticism has apparently hurt the sale of Sanatogen to a greater degree than the more serious objections made to the preparation. This also accounts, doubtless, for the fact that the attempts to answer The Journal's criticisms, by those who are selling Sanatogen, have been largely devoted to the one point—its outrageously high price.

The fundamental objection to Sanatogen is not its high price, but the attempt to ascribe to a mixture of casein and glycerophosphates powers not possessed by these ingredients—in other words, the misleading and fraudulent claims made for it. Even if it were sold at cost price, the stuff, as at present advertised, would still be a fraud. The nub of the whole matter is: The claims made for Sanatogen are unwarranted, misleading and fraudulent.

#### SOME FRAUDULENT CLAIMS

The constituents of Sanatogen are casein and sodium glycerophosphate. These two very ordinary substances possess, so the Sanatogen people would have us believe, peculiar properties when they are brought together in chemical combination. Sanatogen, they claim, *is* a chemical combination of these constituents. The claim may be a good "selling-point," but it cannot be, and is not, seriously taken by chemists. But even supposing, for the sake of argument, that sodium glycerophosphate and casein could be combined, there is not a scintilla of evidence to show that such a combination could survive the destructive influence of digestion and be absorbed. Whether Sanatogen is a chemical combination of casein and sodium glycerophosphate or a mere mechanical mixture of these two substances is really immaterial. In either case, it would be separated into its constituent parts by the digestive juices and would have the properties of sodium glycerophosphate and casein, and nothing more.

Remembering this, let us examine once more some of the claims made for this patent medicine:

> "Sanatogen is a nerve and tissue food for which the brain, spinal cord and the nerves have a special predilection."
>
> ". . . practically identical with the main ingredient of nerve and muscle cells. . . ."
>
> "Sanatogen stands pre-eminent in its power to feed the nerve centers, to promote healthy digestion, to give strength and endurance to the entire system."
>
> ". . . food for tired nerves. . . ."
>
> ". . . a rational, scientific nerve-food."

To the physiologist, the term "nerve-food" is an absurdity. The processes of digestion reduce the albuminous substances (proteins, such as casein) of the food to simpler forms. This is true no matter what may be their source. Whether the proteins are derived from the gluten of wheat, the casein of milk or the albumin of egg, one will "feed the nerves" just as well as the other. And Sanatogen "feeds the nerves" no more than, in fact not as much as, do bread and meat and eggs. Of course, the casein in Sanatogen has food-value, but so has ordinary casein—cottage cheese, "pot cheese," or the German *schmierkäse*, for instance—and it is both false and fraudulent to claim for the casein in Sanatogen any greater nutritive value than that possessed by the casein in ordinary milk. To pretend that there are wonderful properties in the protein of Sanatogen when just as good protein can be purchased (for much less money) from the milkman, is to perpetrate a fraud on the purchaser. Here are some more claims:

> ". . . marvelous revitalizer of nerve health."
>
> ". . . Sanatogen has positive reconstructive force in neurasthenia."
>
> "If You Need New Strength and Vitality You should at once get acquainted with Sanatogen."

Strangely like the "lost manhood" advertisements, this last. And this, also:

> ". . . has brought new strength, new vitality and new relish of life to thousands upon thousands who suffered from starved nerves. . . ."
>
> "Countless people . . . have regained fresh health and vigor through the vitalizing and invigorating effects of Sanatogen."

Of course Sanatogen is not sold as a "consumption cure." No such crude claims as these emanate from the skilled advertising agents employed by the Sanatogen people. If they did they could not get space in high-grade magazines! As a preventive of consumption, however, we find:

> "Sanatogen . . . creates new tissue and nerve capital . . . This nerve capital will . . . save the individual from attacks of acute disease. Against tuberculosis it is an excellent investment."

Also, it is a pick-me-up! Thus:

> "Sanatogen promises to pick you up when run down—*it does so.*"

Most people are under the necessity of working for a living. If we are to believe the Sanatogen advertisements, it seems remarkable that the human race has managed to jog along for so many centuries without this product, for we read:

> "It is practically indispensable to all who are unable to take prolonged rest. . . ."

Naturally we do not expect to find the coarse, "free-to-you-my-sister" type of claims in Sanatogen advertisements. Nevertheless:

> "Women . . . find in Sanatogen a genuine sustaining agent."

Finally, we would respectfully direct the attention of those gentlemen of the medical profession who have so far forgotten the dignity of their calling as to give fulsome puffs for this casein-glycerophosphate product to the following claims and ask whether they really subscribe to them:

> ". . . it revivifies the nerves, promoting sleep and helping digestion. . . ."
>
> ". . . it builds up the blood, creating new strength and the power to do and accomplish."
>
> ". . . Sanatogen is a *natural*, healthful food and tonic. . ."
>
> ". . . a health and strength giving food and tonic composed of those very elements which make cell and tissue grow."
>
> "Blood and tissues alike hunger for Sanatogen as their concentrated nourishment."
>
> "Sanatogen is the one food tonic that commands your absolute confidence."

How many intelligent physicians really believe that there is the slightest basis of fact for the claims we have quoted? Yet it is by means of these claims that Sanatogen is being foisted on a public that looks to the medical profession for enlightenment and truth. And every quotation in this article is taken from advertising matter issued during the current year, 1913!

In closing, let us reiterate: The objections to Sanatogen are primarily the objection to any fraud. It is being sold under unscientific, misleading and fraudulent claims; moreover, although this is of less importance, the purchaser pays an extraordinary price for a most ordinary product. We believe the time will come when even the artificial stimulus of vast advertising appropriations will be insufficient to overcome the inertia inherent in a product of small merit. When that time comes, Sanatogen will die a natural death. In the meantime, its exploiters are reaping a golden harvest, of which no small part is being divided among publishers, medical and otherwise. And the credulous among the sick and suffering pay the bills!

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[1] The present article and previous ones on this subject are reprinted in a pamphlet entitled "Sanatogen," price 4 cents.

## Miscellany

**Preservation of Eggs by Refrigeration in Sterile Air.**—M. F. Lescardé at the Third International Congress of Refrigeration described a method of preserving eggs by refrigeration in sterile air. The eggs are placed on end in horizontal fillers made of pasteboard and wood; then these fillers are put into tin cases which can be hermetically sealed, each case having a capacity of six fillers containing 160 eggs. The covers of the filled cases are then soldered, and the cases are deposited in an autoclave (digester) which contains twelve cases of 960 eggs each. A vacuum is then made in the autoclave, and a duly proportioned mixture of two gases, carbon dioxid and nitrogen, is injected. This process is very simple because carbon dioxid and nitrogen, in the form of compressed or liquefied gases, are on the market now, so that the manipulation of a few cocks, and the reading of a gauge suffice to produce the proper mixture. The process in the autoclave having been completed, the cases are taken out, hermetically sealed, and stored in cold storage rooms, at a temperature varying between 1 and 2 C. The chief advantages accruing from the preservation of eggs in sterile air are the following: (1) Waste, of such importance in ordinary cold storage, is completely eliminated. (2) The eggs retain a perfectly "fresh" flavor, and consequently they remain excellent for table use even after ten months' storage; they also retain their full weight, because no evaporation is possible in the tin cases. (3) After their removal from the cold storage rooms the eggs remain in perfect condition for a long time, and can be shipped long distances without deterioration; this constitutes a signal superiority over the ordinary cold storage eggs, which deteriorate rapidly after having been taken out of cold storage. The reason for this is simple: the antiseptic air which surrounds them for several months, together with the cold, absolutely destroy all bacteria which may be on the shell of the egg, or in its substance. Deterioration cannot set in except by reinfection, which is produced only by exposure to the air for several weeks. By reason of the above-mentioned advantages, eggs preserved in sterile air find a ready market, and command much higher prices in winter than ordinary cold storage eggs, or even the so-called "fresh" imported eggs. The cost of treatment and preservation, amount to 15 francs per thousand.

**The Decidua Has an Internal Secretion.**—Gentili gives a detailed description in the *Ann. di Ostet. e Ginecol.*, 1913, xxxv, 257, of experiments with aqueous extracts of the decidua of cows, dogs and human beings. These extracts proved very toxic when injected in small doses into the circulation of rabbits. The extract of rabbit and guinea-pig decidua is also toxic for their own species, though in larger doses. The toxic phenomena are similar to those caused by injection of extracts of the glands which have an internal secretion; but contrary to the action of these extracts, the decidua extract is more toxic for different species. The post-mortem picture in animals dying from the effect of the injection of decidua extract is similar to that of animals dying from fatal doses of extracts of other organs having internal secretion. There was thrombosis of the pulmonary veins, showing the presence of some substance that favors coagulation of the blood within the body. This substance can be neutralized by blood-serum from the same species of animal from which the decidua was taken. In cows, particularly, the greater toxicity was in the early stages of pregnancy. Aside from its toxic effects, decidua extract always has the property of causing a marked fall in blood-pressure. It lessens the force of the systolic wave and produces disturbance in the cardiac and respiratory rhythm. Similar but less pronounced phenomena are produced by extracts of the corpus luteum. It is evident from these results that the conjecture that the decidua has an internal secretion is no longer merely a logical supposition, but has been demonstrated by experiments to be a fact.

## Correspondence

### Federal Regulation of the Practice of Medicine

*To the Editor:*—I have read your comments on the Reilly bill (THE JOURNAL, Oct. 25, 1913, p. 1557) to the effect that the Reilly bill is "an impossible proposal," by reason of the fact that in the United States "the regulation of the practice of medicine comes under the police power of the state legislatures and not under that of Congress," and further that "the consideration of any measure by Congress providing for the control of the practice in the states by any federal board is simply a waste of time, as any such measure, even if adopted, would be declared unconstitutional as soon as it came into court." If your views correctly state the powers of Congress, this bill should and will be killed in the committee in charge, notwithstanding the fact that "in every other civilized nation such national control is in effect" and the desirability of such a control is generally recognized in the United States. For myself and other readers of THE JOURNAL to whom I have spoken, none of whom are deeply versed in constitutional law, but who are possessed of an abiding faith in the powers of Congress to legislate for the general welfare of the citizens of the whole United States even to the extent of guarding the health and life of every citizen of the land; and who are imbued with a belief that the preamble of the Constitution of the United States did not in general terms overstate the powers conferred on Congress by the Constitution at the time of its adoption, and with a belief that the powers of Congress were enlarged, and not weakened, by the subsequent amendments, it is difficult to accept the view that Congress has not the power to provide for the common defense and general welfare of all the people in like manner as the states may do for all the people within their borders in the exercise of the so-called police power of the state. Although Congress has not in the past supplemented the powers of the state in all cases with her general power to promote the general welfare of citizens of the United States in the matter of guarding their lives and health, such omissions do not justify the inference that Congress is void of the power to do so. Congress has recently exercised this latent power on more than one occasion. Congress possesses all the powers conferred by the eighth section of the United States Constitution, and, in addition to the powers mentioned in Section 8 of the federal Constitution, Congress may do anything that is not prohibited by the Constitution. These latent powers of Congress have supplemented the police powers of the state in the passage of the federal Food and Drugs Act, generalizing the Pure Food and Drugs Law of the state of Indiana passed in the exercise of the police power of that state a few years previously to the federal law, and the Supreme Court has not annulled the federal law.

Congress has within the last few months passed a national income-tax law supplemental to the income-tax laws of many of the states, and no good lawyer will gainsay the constitutional right of Congress to do so. Neither do I find any decisions by any court of last resort denying Congress the latent power to provide for the general welfare even to safeguarding the lives and health of the citizens of the United States by a congressional regulation of the practice of medicine. Will you not in some future editorial assist your readers to a clearer understanding of the constitutionality of the Reilly bill by citing a few Supreme Court decisions showing that Congress has not the power to promote the general welfare of the people of the United States even to the federal regulation of the practice of medicine? So long as that regulation applies to all parts of the union equally, let your readers have "thus sayeth the law" and be convinced.

M. M. CLAPPER, M.D., Hartford City, Ind.

COMMENT.—The reference of our correspondent to the new income-tax law is the best possible illustration of the limitations of federal power. It will be remembered that Congress, a number of years ago, did pass an income-tax law, which was promptly decided by the United States Supreme Court to be unconstitutional. An amendment to the Constitution was then prepared and submitted to the states. As soon as the necessary number of states had ratified it, Congress at once passed an income-tax measure. If the Reilly bill or any similar measure should become a law, the Supreme Court would without doubt declare it unconstitutional. An amendment to the Constitution similar to the income-tax amendment would then be necessary to make such a law valid.

Taking up now the question raised by our correspondent, the expression "public welfare" embraces a variety of interests. It may refer to primary social interests of safety, order and morals; to economic interests, or to political interests. The federal government, through its constitutional authorization, has delegated to it, in large part, chiefly the third class of interests, while the first two are reserved to the several states or to the people. As a result, it would appear from the best authorities that there can be no federal regulation of the practice of medicine whereby a person may, under a federal license, be authorized to practice in any given state, and contrary to the laws thereof. That is to say, that each state only may determine who is to practice medicine within its jurisdiction, and that Congress has no power to legislate to that end. (Freund, Police Power, Paragraph 9. Stimpson, The American Constitutions, Chapters 3, 10, pp. 60, 106).

The profession of the physician, whose relations to life and health are of the most intimate character, and thereby closely associated with "safety, order and morals," would clearly seem to fall within the first group, that is, the "primary social interests." It is almost entirely because of this intimate relationship, whereby the ignorant and credulous may be imposed on by empiricists and charlatans, that the government is authorized to enact certain conditions for the regulation of the medical profession. The right to impose such regulations is derived from the "power of police," or power to prohibit and prevent the perpetration and promulgation of any act *per se* fraudulent. "Police power" is inherent in all governments or sovereignties. That is, the right and authority to issue police regulations for the furtherance of the public safety, order and morals or for the social interests, is a consequence of the establishment of government. But, under the Constitution of the United States, the federal government has only such powers as are either expressly or impliedly vested in it. All other powers are reserved to the several states or to the people. Among such reserved powers are the powers of police within the jurisdiction of each of the several states, and included therein is the right to regulate the practice of medicine within the confines of each of the states. (Freund, Police Power, Paragraphs 10, 64, 65, 68, 85. *Dent v. West Virginia*, 129 U. S. 114; *Hawker v. New York*, 170 U. S. 189; *Jacobson v. Massachusetts*, 197 U. S. 11; *State v. Hathaway*, 115 Mo. 36.)

A state regulates its domestic commerce, contracts and the transmission of estates, real and personal, and acts on all internal matters which relate to its moral and political welfare. Over these subjects the federal government has no power. The "police power," which is exclusively in the states, is alone competent to preserve the public peace, health and morals. Nor can this power be taken from the states, either wholly or in part, and exercised under legislation of Congress.

The precise question as to the constitutionality of a federal enactment regulating the practice of medicine has not, so far, been decided by the United States Supreme Court because no federal law providing for such regulation has ever been enacted; but an examination of the several cases, cited herewith, would seem to show that all legislation regulating the practice of medicine is but an exercise of that "police power" vested solely in each of the several states to control the "primary social interests" as to health, morals and safety, and further, that from the very institution of our form of government, state and federal, all such affairs as the regulation of the liquor traffic, the regulation of the practice of medicine, and in fact any matter involving the intimate relations of daily life as between man and man, were specifically vested in the states. Hence it would clearly seem to follow under the rule that a court must follow the law as heretofore decided in prior cases, that the validity of such a measure could hardly be decided otherwise than negatively. (*Martin v. Hunter's Lessee*, 1 Wheaton 304; License Cases, 5 Howard 4; United States v. DeWitt, 9 Wallace 41; *Barbier v. Connolly*, 113 U. S. 27; *People v. Compagnie Générale*, 2 Sup. Ct. Rep. 87; *Mugler v. Kansas*, 123 U. S. 623; *Gundling v. Chicago*, 177 U. S. 183; *Compagnie Française v. Louisiana*, 186 U. S. 380; *Jacobson v. Massachusetts*, 197 U. S. 11; *Williams v. Arkansas*, 217 U. S. 546).

No power has been conferred on the federal government by the Constitution of the United States whereby the government may establish mere police regulations within the jurisdiction of any state. And the federal government can claim no power not granted by the Constitution; hence federal authority is limited to a simple prohibition on the states as against any invasion of the sphere of national sovereignty.

Thus, it would seem to be well settled that the police powers of the states extend to the regulation of those callings which closely concern the public health. And further, it would seem clear that legislation which simply defines the qualifications, and provides for the licensure, of one who attempts to practice medicine within the jurisdiction of any given state is something confessedly belonging to the domain of the police power as vested in that state. Hence it is that no power can be found vested in Congress authorizing a federal regulation of the practice of medicine within the confines of any one or all of the several states. This view is evidently held by the United States Supreme Court in all the cases involving the state control of the practice of medicine which have come before it. (*Dent v. West Virginia*, 129 U. S. 114; *Hawker v. New York*, 170 U. S. 189; *Reetz v. Michigan*, 188 U. S. 505; *Watson v. Maryland*, 30 Sup. Ct. Rep. 644).

## The Regeneration of the Blood After Splenectomy

*To the Editor:*—The editorial on this subject (THE JOURNAL, Nov. 15, 1913, p. 1816) gives such an incorrect idea of the present state of our knowledge concerning this subject that I feel compelled to call attention to certain discrepancies in the data on which the editorial is based. An extensive study of the changes in the blood following splenectomy in the normal dog, carried out under my direction during the past two years (Pearce, R. M.: The Relation of the Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice, Papers I-VII, *Jour. Exper. Med.*, 1912, xvi, 363, 375, 758, 769, 780; 1913, xviii, 487, 494; an eighth paper is now in press [*Jour. Exper. Med.*, December, 1913]) has demonstrated conclusively that the spleenless animal always develops an anemia which is progressive for several weeks, usually reaching its period of greatest severity after from three to six weeks and then gradually improving with a return to normal after from three to five months. This is a constant occurrence, demonstrated again and again, in many animals. In Vogel's work (from Asher's laboratory), which is the basis of the editorial opinion, a diet with high iron content was commenced eighteen days after splenectomy. As the condition of the blood improved, it was assumed that this improvement was due to the high iron content of the diet. This conclusion rests on a single experiment on a splenectomized dog with a normal dog as control. There is no control of the experiment by a study for a long period of the blood-picture in a splenectomized animal on an ordinary or low iron diet. The administration of a diet rich in iron was begun, not immediately after splenectomy, but after eighteen days, when, according to observations, regeneration of the blood usually begins. The question naturally arises, Was the improvement in Vogel's single experiment due to diet or to the regeneration naturally occurring at this time? The theory that one function of the spleen is to regulate the iron metabolism is most plausible, but it should have more definite basis than that offered by a single experiment. In our own work on iron metabolism in the splenectomized dog, on low and high iron diet, though four splenectomized animals have thus far been used, we have on account of the discordant results of chemical analysis reached no definite conclusions.

On the basis of Banti's theory (that in certain forms of splenomegaly the accompanying anemia is due to a hemolysin of splenic origin) splenectomy, in that improvement follows the procedure, may have some justification; but in pernicious anemia the justification is not so clear and the results thus far reported are by no means uniformly favorable. If it is done as a last resort and a forlorn hope it may perhaps be countenanced, but it should be definitely understood that the procedure is not in accord with such experimental evidence as we have at hand. The problems concerning the spleen in its relation to blood destruction and regeneration are exceedingly complex, and the experimental and clinical evidence often paradoxical; but until more definite knowledge is at hand splenectomy in anemia, not accompanied by splenomegaly as in the Banti type, should not be urged as a procedure having a definite scientific basis.

R. M. Pearce, M.D., Philadelphia.

[Comment.—We are glad to print the foregoing communication from Professor Pearce and to call attention in this way to his researches on the relation of the spleen to the blood. The question of the relation of the spleen to iron metabolism is, it must be frankly admitted, still *sub judice.* With respect to the final contention in the foregoing communication we believe that we were quite as cautious in drawing any permanent conclusions as Professor Pearce has been. Our object was essentially to give prominence to a suggestion which is not entirely devoid of an experimental background. The limitations of our knowledge in this field were plainly referred to.—Ed.]

### "Burnam's Test" for Formaldehyd: a Question of Priority

*To the Editor:*—Hugh Cabot and O. R. T. L'Esperance in an article entitled "The Excretion of Formaldehyd by the Kidneys of Patients Taking Hexamethylenamin, a Study of Burnam's Test" (*Boston Med. and Surg. Jour.*, Oct. 24, 1912, p. 577), and later B. F. Jeness in an article entitled "Burnam's Test for Formaldehyd in the Urine" (The Journal, March 1, 1913, p. 662) described in detail a method for determining small quantities of formaldehyd in the urine, calling this method, both in the title and in the text, "Burnam's test." This test consists in the use of dilute solutions of phenylhydrazin hydrochlorid, sodium nitroprussid and sodium hydroxid. It is a delicate color reaction, for all practical purposes specific for formaldehyd and very sensitive, revealing the presence of minute quantities of formaldehyd, even in albuminous fluids, such as milk, nephritic urine, etc.

This so-called "Burnam's test" was discovered by Rimini (*Ann. di Farmacol.*, 1898, p. 97), and has been in use extensively ever since as "Rimini's test." I have used it for years in my formaldehyd work (see *Tr. Chicago Path. Soc.*, 1912), my attention having first been called to it in a paper by Fenton (*Tr. Chem. Soc.*, 1907, xci, 693), who speaks of "Rimini's test" as one of the most reliable methods for detecting small quantities of formaldehyd. In looking the matter up, I find "Rimini's test" given as a standard method in several lexicons and encyclopedias of practical chemistry.

Why deprive the discoverer of this important method of the distinction of having his name attached to it? It is "Rimini's test" and not "Burnam's test," and should be so named by all who use it—including Burnam and his coworkers.

A. C. Croftan, M.D., Chicago.

## *Queries and Minor Notes*

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### FACIAL SPASM

*To the Editor:*—What is the probable cause of involuntary unilateral twitching (spasm) of the pyramidalis nasi muscle? Spasms come on frequently during the day, last five minutes or so and stop. *Embarrassment* results from the grimacing. There is no discoverable cause in ear, nose or throat. What portion of the facial nerve is probably affected, and what treatment could you suggest?

Q., Walla Walla, Wash.

Answer.—The etiology of facial spasm is still an obscure chapter in medicine. Owing first to the intimate relationships existing between psychic activity and facial expression and, secondly, because of the many connections between the facial nerve and numerous sensory nerves, we recognize two general causes, psychic and reflex, for the production of involuntary facial twitching. To the psychic variety belongs the large group of facial tics, called also tic convulsif, conditions having a psychogenic basis and consequently *curable only* by psychic means. Meige and Feindel have published an interesting book (Tics and Their Treatment, translated by S. A. K. Wilson; New York, William Wood & Co., 1907, $3), the classic on this subject, which contains not only the etiology and the varied symptomatology of tic convulsif, but also a detailed treatment of this type of facial unrest. With reference to reflex facial spasm, every organ in contiguity to the face and supplied by the trigeminus or other cranial nerve, and even organs remote from the facial territory, must be carefully examined and any existing pathologic condition remedied. Oppenheim, for instance, has seen the disappearance of spasm in the pyramidalis nasi by removal of enlarged tonsils; others have had the same result by correcting uterine displacements and relieving genital disorders. Rarely facial spasm is caused by direct compression of the facial nerve by either tumor or aneurysm, in which event the underlying condition must be treated. In a few cases localized facial spasm is produced directly by the occupation which the patient follows, as for instance the spasm in orbicularis and nasal muscles occurring in watchmakers. In the majority of cases, however, a definite anatomic basis is not demonstrable. Last but not least, there is a slight twitching, more felt than seen, in the orbicularis and nasal muscles which results from states of fatigue and nerve-strain and is frankly neurasthenic in character. In these cases the treatment of neurasthenia will be indicated. It is impossible to give definite directions for the treatment of a symptom having so many possible causes. In a general way it will be necessary to decide whether the case is one of tic or true spasm. Tic is treated by psychotherapy, while the facial spasm must be treated according to the nature of the lesion, depending on the origin and pathology of the symptom—from the performance of a brain operation to the touching up of the nasal mucosa with silver nitrate.

### ARTICLES ON DYNAMIC ILEUS

*To the Editor:*—Please furnish me with all available literature on the subject of dynamic ileus.

Edwin D. Watkins, M.D., Memphis, Tenn.

Answer.—The following list includes the most recent articles on this subject:

Vaccari, L.: Postoperative Paresis of the Intestines, *Policlinico*, Jan. 28, 1912.
Dieffenbach, W. H.: Electric Treatment of Intestinal Obstruction and Postoperative Paralysis of the Bowel, The Journal, April 1, 1911, p. 958.
Illoway, H.: Hysteric Paralysis of Intestines, *Arch. f. Verdauungskr.*, 1912, No. 3; Hysteric Paralysis of Somewhat Rare Form, *Arch. Diagnosis*, October, 1911.
McElhaney, C. W.: Ileus Paralyticus Relieved by Operation, *Med. Fortnightly*, March 10, 1911.
MacMillan, J. A.: Acute Postoperative Paresis of Intestine, *Proctologist*, September, 1912.
Pilcher, J. T.: Experiences with Hormonal in Treatment of Acute and Chronic Intestinal Paresis, *New York State Jour. Med.*, November, 1912.
Pettenkofer, W.: Electric Treatment of Postoperative Paralysis of the Intestines, *München. Med. Wchnschr.*, Nov. 5, 1912.
Schubert, G.: Postoperative Ileus, *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, No. 2.
Hartwell, J. A.: Intestinal Obstruction, *Jour. Exper. Med.*, August, 1913; abstr., The Journal, Aug. 30, 1913, p. 710.
Renton, J. C.: Intestinal Obstruction, *Edinburgh Med. Jour.*, September, 1913; abstr., The Journal, Oct. 4, 1913, p. 1330.
Adams J. E.: Intestinal Obstruction, *Practitioner*, London, September, 1913.
Bundschuh, E.: Volvulus of the Large Intestine, *Beitr. z. klin. Chir.*, 1913, lxxxv, No. 1.
Sweet, J. E.: High Intestinal Obstruction, Postoperative Ileus and Acute Pancreatitis, *Pennsylvania Med. Annals*, April, 1913.

### THE VALUE OF ECHINACEA

*To the Editor:*—Is there any great value in echinacea, and if so in what does it consist? I find a good many physicians using it who seem to think that it possesses value as preventing the formation of pus, and in perhaps getting rid of pus after it has formed. In the many cases which I have seen in which it was used, I have been unable to satisfy myself that any effect whatever was produced, and I have looked on it, therefore, as entirely worthless. Some physicians give it by the stomach, and some hypodermically, the latter claiming great increase of virtue when it is thus given.

Surgeon.

Answer.—Echinacea has been claimed to be a "specific" for rattlesnake bite, syphilis, typhoid fever, malaria, diphtheria and hydrophobia. Later enthusiasts have credited it with equally certain curative effects in tuberculosis, tetanus and exophthalmic goiter, and with power of retarding the development of cancer. On the basis of the available evidence the Council on Pharmacy and Chemistry decided that echinacwas not worthy of recognition as a drug of probable value. Accordingly it voted not to describe the drug in New and Nonofficial Remedies (THE JOURNAL, Nov. 27, 1909, p. 1836).

So far as can be learned no reliable evidence for the claims made for this drug has been presented since the Council decided that the available evidence did not entitle it to a place in New and Nonofficial Remedies.

### DOES SMALL-POX PROTECT AGAINST BOVINE VACCINATION?

*To the Editor:*—In THE JOURNAL, Oct. 25, 1913, p. 1556, in answer to this question of Dr. R. P. Stark, you answer, "Yes." I do not know on what data you found your answer, as opportunities to try the experiment must seldom present themselves. No physician would be apt to urge vaccination on a person who has had small-pox; but I once had an opportunity to try it, and the result was quite a surprise both to the patient and to myself. In 1880 I was a vaccinator of the board of health during an epidemic in this city. In the course of my wanderings among the dwellers in the tenement-houses, offering them vaccination, I came across a woman of about 50, deeply pitted from an attack of variola sustained while a child in Ireland. In joke, I offered to vaccinate her. To my surprise she consented. I explained to her that it might take, and if so, would probably make her quite sick, and assured her that as a prophylactic she had no need of it, as she was already better protected against another attack than any vaccination I could give her But she was very anxious to try the experiment and so I vaccinated her. After about a week she developed as fine a primary as I have ever seen, with considerable malaise, fever, etc., which ran the usual course.

E. HOCHHEIMER, M.D., New York.

ANSWER.—This case is, of course, somewhat exceptional, but other instances of a like nature have been reported. That the development of vaccinia is prevented by the presence of an active small-pox is shown by the fact that vaccination does not take when performed before or during the primary fever of small-pox. It is not impossible that an immunity should disappear after a long period of time.

### OPERATION FOR LACERATED CERVIX—TREATMENT IN PARALYSIS OF LEGS AFTER POLIOMYELITIS

*To the Editor:*—1. What is the approved method of dealing with a lacerated cervix at time of delivery?

2. Please name other measures of benefit besides persistent massage and hygiene for paralysis of both legs in a young child following poliomyelitis.

H. T.

ANSWER.—1. The operation should be postponed to the latter part of the puerperium unless hemorrhage is serious, in which case immediate suture should be resorted to.

2. Endeavor should be made to induce the child to use vigorously any muscles which remain unparalyzed. Sometimes the slowly interrupted galvanic current will excite contractions in the larger muscles, and if this is the case it should be used for a few minutes twice a day. Any tendency to deformity should be opposed by appropriate apparatus. Foot-drop is most apt to occur, and can usually be prevented by a simple Taylor club-foot brace. If severe contractions develop rapidly, conservative tenotomy and redressment may be required. After about two years of conservative treatment, the case will be ready for radical operation according to the indications, tendon transplantation if possible, joint fixation if necessary. The object, of course, is to enable the patient to walk without apparatus, although this object cannot always be attained.

### ARTICLES ON ABDERHALDEN'S SERODIAGNOSIS

*To the Editor:*—Please describe the technic for the Abderhalden reaction especially as applied to organic diseases. I want to try it out with the different forms of epilepsy and insanity.

H. M. FRANCISCO, M.D., Skillman, N. J.

ANSWER.—The Abderhalden test as applied to the diseases mentioned is performed with a technic based on that for pregnancy. THE JOURNAL has published the following articles on the subject:

The Present Status of Abderhalden's Serodiagnosis, editorial, THE JOURNAL, Aug. 16, 1913, p. 493.
Fauser, A.: Serodiagnosis by Abderhalden's Technic, Deutsch. med. Wchnschr., Feb. 13, 1913; abstr., THE JOURNAL, March 22, 1913, p. 949.
Judd, C. W.: The Serum Diagnosis of Pregnancy, THE JOURNAL, June 21, 1913, p. 1947.
Schwarz, Henry: Serodiagnosis of Pregnancy, THE JOURNAL, Aug. 16, 1913, p. 484.
Abderhalden's Test in Cancer, editorial, THE JOURNAL, Oct. 18, 1913, p. 1461.
The Blood Test for Pregnancy, THE JOURNAL, Dec. 7, 1912, p. 2073.
Technic of Abderhalden's Serodiagnosis for Dementia Praecox, Queries and Minor Notes, THE JOURNAL, May 31, 1913, p. 1727.

# *Medical Education and State Boards of Registration*

## COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.
ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.
COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DELAWARE: State Society and Homeopathic, Dover and Wilmington, Dec. 9-11. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.
ILLINOIS: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.
INDIANA: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.
IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KENTUCKY: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.
MARYLAND: Regular, 1211 Cathedral St., Baltimore, Dec. 9. Sec., Dr. J. McP. Scott, Hagerstown; Homeo., St. Luke's Hospital, Baltimore, Dec. 15-16. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.
MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.
NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.
NEW MEXICO: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.
NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.
OHIO: Columbus, Dec. 9-11. Sec., Dr. Geo. H. Matson, State House.
OKLAHOMA: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.
OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.
SOUTH DAKOTA: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.
VERMONT: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.
WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.
WISCONSIN: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

## Nebraska August Report

Dr. H. B. Cummins, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, August 13-14, 1913. The number of subjects examined in was 8; percentage required to pass, 75. The total number of candidates examined was 16, all of whom passed. Eight candidates have been granted licenses through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Bennett Medical College | (1913) | 77.5, 80.4 |
| Chicago College of Medicine and Surgery | (1913) | 79.6 |
| Hahnemann Medical College and Hospital, Chicago, | (1913) | 84.6, 85, 85. |
| Hering Medical College, Chicago | (1913) | 90.9 |
| Hamline University | (1904) | 78.6 |
| University Medical College, Kansas City | (1913) | 84.6 |
| John A. Creighton Medical College | (1912)<br>(1913) | 76, 80.1;<br>79.9, 80.9, 81. |
| University of Nebraska | (1912) | 85.9 |
| Meharry Medical College | (1912) | 79.2 |

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| Barnes Medical College | (1907) | Illinois |
| Drake University | (1911) | Iowa |
| State University of Iowa, College of Medicine | (1907) | Iowa |
| American Medical College, St. Louis | (1913) | Tennessee |
| Eclectic Medical University, Kansas City | (1911)<br>(1912) | Arkansas;<br>Arkansas. |
| University Medical College, Kansas City | (1904) | Kansas |
| John A. Creighton Medical College | (1912) | S. Dakota |

## Ohio July and October Reciprocity Reports

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that at the meetings held July 7 and October 14, 1913, twenty candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| Denver and Gross College of Medicine | (1909) | Colorado |
| University of Colorado | (1911) | Colorado |
| George Washington University | (1902) | Dist. Colum. |
| American Medical Missionary Coll., Chicago | (1909) | Michigan |

| | | |
|---|---|---|
| Rush Medical College, Chicago | (1913) | Nebraska |
| University of Illinois ......... (1909) Illinois; | (1912) | Illinois |
| Indiana University | (1908) | Indiana |
| Keokuk Medical College | (1904) | Iowa |
| University of Iowa, College of Medicine | (1913) | Iowa |
| University of Louisville..... (1912) Kentucky; | (1912) | W. Virginia |
| University of Michigan | (1912) | Michigan |
| St. Louis University | (1905) | Missouri |
| Washington University, St. Louis | (1912) | Illinois |
| Long Island College Hospital, N. Y. | (1899) | New York |
| University of Buffalo | (1897) | New York |
| Cleveland Homeopathic Medical College | (1909) | New York |
| Ohio Wesleyan University | (1911) | Illinois |
| Western Pennsylvania Medical College | (1908) | Penna. |

One candidate, a graduate of the University of Naples, 1908, was examined, and passed with a grade of 86.9.

## Arizona October Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners of Arizona, reports the written and practical examination held at Phoenix, Oct. 7-8, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 13, of whom 7 passed and 6 failed, including 3 osteopaths. Eight osteopaths were licensed through exemption. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| University of Colorado | (1912) | 77.7 |
| Bennett Medical College | (1912) | 80.4 |
| Chicago Medical College | (1901) | 84.1 |
| Indiana University | (1912) | 80.6 |
| University of Louisville | (1909) | 81.1 |
| College of Physicians and Surgeons, Baltimore | (1890) | 75.4 |
| National Medical College, Mexico City | (1896) | 74.7* |

* Credit allowed for years of practice.

FAILED

| | | |
|---|---|---|
| Atlanta School of Medicine | (1907) | 63.1 |
| John A. Creighton Medical College | (1905) | 70.6 |
| Louisville Medical College | (1893) | 65.2 |

## Colorado October Report

Dr. D. A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 7, 1913. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 10, of whom 9 passed and 1 failed. Twenty-nine candidates were licensed through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| University of Colorado, (1912) 75.7; 79.7; 89.5; (1913) 75.8; 76.2;; 80.1; 81.2; 83.4. | | |
| Harvard Medical School | (1913) | 82.6 |

FAILED

| | | |
|---|---|---|
| Eclectic Medical University, Kansas City | (1910) | 59.5 |

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| University of Colorado | (1912) | New Mexico |
| Hahnemann Medical College and Hospital, Chicago | (1884) | Indiana; |
| [illegible] Illinois | | |
| [illegible] ...... (1910) Illinois; | (1912) | Illinois |
| [illegible] | (1909) | Illinois |
| Rush Medical College | (1906) | Illinois |
| University of Illinois | (1905) | Indiana |
| Medical College of Indiana | (1894) | Iowa |
| Keokuk Medical College | (1910) | Kansas |
| Kansas Medical College | (1905) | Oklahoma |
| University of Louisville | (1891) | Penn. |
| Baltimore Medical College | (1908) | W. Virginia |
| College of Physicians and Surgeons, Baltimore | (1899) | Michigan |
| Detroit College of Medicine | (1905) | Indian Ter. |
| Ensworth Medical College, St. Joseph | (1905) | Kansas |
| Kansas City Medical College ...... (1896) Illinois; | (1899) | Illinois |
| Missouri Medical College | (1890) | New Mexico |
| St. Louis Medical College | (1905) | Missouri |
| St. Louis University | (1898) | Missouri |
| University Medical College, Kansas City | (1912) | Missouri |
| Washington University | (1900) | New Mexico |
| University and Bellevue Hospital Med. College | (1899) | Ohio |
| Cleveland Homeopathic College | (1897) | Nebraska |
| Cleveland Medical College | (1891) | Penn. |
| Eclectic Medical Institute, Cincinnati | (1887) | Penn. |
| Medico-Chirurgical College, Philadelphia | (1911) | Penn. |
| University of Pennsylvania | (1904) | Dist. Colum. |
| Woman's Medical College of Pennsylvania | | |

The following questions were asked:

ANATOMY

1. Explain the bony formation of the elbow joint, naming the bony prominences which can be palpated, with their normal relationship. 2. Discuss the construction of the cranium, naming bones and stating how its anatomical formation tends to lessen the force of external violence. 3. Describe the inguinal canal. 4. Give complete anatomy of the sternomastoid muscle. 5. Define flexion, extension, adduction and rotation; mention muscles with attachments which perform these functions. 6. Draw a chart illustrating the blood-supply of the uterus with comments. 7. Trace the course of the main arterial trunk of the lower extremity from the bifurcation of the aorta to the popliteal space. 8. Describe the portal system of veins. 9. What is the thoracic duct? Give origin and course. 10. What is the fissure of Rolando, its significance, and how may it be located on the cranium?

PHYSIOLOGY

1. Give the function of the liver, and of the bile. 2. Describe the functions of the skin, mucous and serous membranes. 3. What are the characteristics of normal urine? 4. Give functions of pneumogastric nerve. 5. What digestive ferments act upon the starches in food, and how? 6. Describe the gross and minute structure of the heart, veins and arteries, giving the bearing on their physiological functions. 7. Name four reflex centers situated in the lumbar enlargement of the spinal cord, with their functions. 8. What do you understand by metabolism? 9. Describe and give the function of the pancreas. 10. Name five ductless glands and define what you understand by internal secretions.

CHEMISTRY

1. Quantitative test for albumin and test for albumose. 2. What constituents of the blood carry oxygen and carbon dioxid? 3. What are the chief chemical constituents of bile? 4. Formula of calomel, and corrosive sublimate, urea, chloral hydrate, sodium borate. 5. What is the chemical reaction when strychnia sulphate is dissolved in an alkaline solution? 6. Define an acid salt and a ketone. 7. What is the chemical composition of human milk in percentages? 8. Give the method of detecting potassium cyanid in the body. 9. Give the difference between a carbohydrate and a hydrocarbon. 10. Write the reaction which occurs when hydrochloric acid, zinc and water act in the presence of arsenic-bearing tissue.

TOXICOLOGY

1. If you were called to see a case with the following symptoms what would be your diagnosis? Headache, imperfect vision, dilated pupils, difficulty in swallowing, drowsiness, tingling sensation along the muscles, gradual and complete paralysis of extremities, extending finally to the muscles of respiration, and patient dies of apnea. 2. What would be your treatment? 3. Give the symptoms of poisoning by atropin. 4. Give treatment of poisoning by atropin. 5. Give symptoms of poisoning by strychnia. 6. Give treatment of poisoning by strychnia. 7. Give symptoms of poisoning by tartar-emetic. 8. Give treatment of poisoning by tartar-emetic. 9. Give post-mortem appearance of poisoning by tartar-emetic. 10. Define toxicology.

SYMPTOMATOLOGY

1. Describe the Widal reaction and tell its uses. 2. Give the symptoms, physical signs and course of a cas[illegible] pneumonia. 3. What are the symptoms of peptic [illegible] the symptoms and signs of dilatation of the [illegible] the causes of ascites and tell how it may be disc[illegible] a case of pulmonary emphysema. 7. Give the symptoms and signs of acute pleurisy with effusion. 8. Give the causes and symptoms of amyloid disease of the kidneys. 9. Describe a case of hysteria. 10. Give the causes, symptoms and signs of dilatation of the heart.

PATHOLOGY

1. Differentiate between benign and malignant tumors. 2. Describe the forms of malignant tumors. 3. What pathologic changes may result from cerebral hemorrhage? 4. Describe hypertrophic cirrhosis of the liver. 5. What is the pathology associated with atrophic cirrhosis of the liver? 6. Describe gonorrheal arthritis. 7. What is an embolus? State the sources of emboli and the sequelae of embolism. 8. What is ischemic paralysis? 9. What are cysts? 10. Give a general explanation of the pathology of edema.

SURGERY

1. Describe the different types of club-foot. 2. What is the pathology of the most common type of dislocation of the shoulder? 3. Give the symptoms and diagnosis of acute appendicitis. 4. What are the structures which would be divided in an amputation through the middle of the forearm? 5. What part of the tibia is most frequently fractured, and what are the symptoms of fracture in this region? 6. Give the diagnosis and pathology of chronic enlargement of the prostate. 7. What are the symptoms and diagnosis of stone in the urinary bladder? 8. What is Pott's fracture? Describe the symptoms. 9. What are the symptoms of acute suppurative arthritis of the knee-joint? 10. What are the symptoms of Pott's disease?

OBSTETRICS

1. Name possible sources of puerperal hemorrhages and treatment of each. 2. What would lead you to suspect extra-uterine pregnancy? 3. In breech presentation describe the different methods of delivering the aftercoming head. 4. You are called upon to take care of a woman in labor; describe how you would proceed as regards sterilization of yourself. 5. Give symptoms of rupture of the uterus. 6. How may you prevent perineal lacerations? 7. Outline treatment for the prevention of ophthalmia neonatorum. 8. Discuss the preventive treatment of eclampsia. 9. Give treatment of eclampsia. 10. Give the mechanism of L. O. A.

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**Scope of Preventive Medicine.**—Preventive medicine means more than vaccination against disease, disinfection and sanitation. It means as well the study of heredity and practice of eugenics, subjects which every physician should consider who is anxious to contribute his share to the prevention of disease and improvement of the race.—L. M. Mervin Maus, in *Chicago Med. Recorder*.

# Book Notices

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Interstitial Gingivitis and Pyorrhea Alveolaris. By Eugene S. Talbot, M.S., D.D.S., M.D. Cloth. Price, $4. Pp. 340, with 102 illustrations. Toledo, Ohio: The Ransom and Randolph Company, 1913.

Interstitial gingivitis or pyorrhea alveolaris is frequently regarded by the dentist as a mere local disease which reveals itself by the suppurative changes in the gums, and is to be treated chiefly by local remedies. The developmental relations of the disease have appealed strongly to the author, however, in connection with his studies in development and degeneracy. He looks at it as a manifestation of constitutional tendencies, having its origin in a disease of the alveolar process of the tooth, which causes the gum to retract; the infection results as a secondary process.

In Talbot's view interstitial gingivitis is divided into two stages: In the first there is an inflammatory process in the bone and teeth leading to absorption of the alveolar process and exfoliation of the teeth; in the second, the gums become infected with pyogenic organisms which cause the production of pus. In the first stage the etiologic agents are toxic irritants which reach the tooth through the blood, in the second the agents of infection attack the gums from the mouth cavity. Attacking the disease by purely local measures, especially disinfectants, can only palliate the effects without reaching the cause of the disease. Hence the author's therapy includes, in addition to constitutional measures, local methods that are directed to the initial stage of the disease and aim to excite a healthy hyperemia by the application of iodin to the gums and vigorous massage with the tooth-brush. In applying iodin he is incidentally using a powerful disinfectant, so that his treatment meets the indications drawn from the infective nature of the later stages of the disease. Vaccine treatment does not meet favor in the author's eyes. He urges that the vaccine is not likely to correspond to the pyogenic germ that causes the suppuration. At any rate such treatment could affect only the suppurative lesions and not the underlying bone disease.

Whether or not some of the experimental work in this volume will fulfil the strict requirements of scientific accuracy may be questioned. For instance, observations on the degree of acidity of urine are cited with no data as to daily quantity; in which case reliable conclusions can hardly be drawn. Other criticisms may be made, but the fact remains that a view of the relations of the jaws and teeth to the nutrition and metabolism of the whole organism is presented which is worth careful consideration. If mere oral sepsis, as shown by the severer forms of pyorrhea, is capable, as Hunter believes, of producing a grave form of anemia classed among the pernicious forms, it behooves us to know all the contributing causes of this condition of the mouth.

A Text-Book of Midwifery for Students and Practitioners. By R. W. Johnstone, M.A., M.D., F.R.C.S., Assistant to the Professor of Midwifery in the University of Edinburgh. Cloth. Price, $3.25 net. Pp. 485, with 264 illustrations. New York: The Macmillan Company, 1913.

This addition to the Edinburgh Medical Series is a volume in every way worthy of its predecessors. It is prepared particularly to meet the needs of students in a book of convenient size containing all essential information; sufficient attention is given to practical points and to the discussion of the management of normal and abnormal cases to bring the work up to the demands of those actually engaged in the practice of medicine. The introductory material on anatomy and physiology is followed by a consideration of the physiology of pregnancy, labor in the various presentations, the physiology of the puerperium, and the pathology of pregnancy, of labor and of the puerperium. Puerperal infection is the chief topic in the last section, though it includes also interesting chapters on the newborn and on infant feeding. Finally, operative obstetrics is discussed, and the volume is completed by a carefully compiled index. The material presented is given concise expression, and the practical phase of the subject is emphasized. Thus, the complicated theme of the development of the early embryo and placenta has been simplified by the exclusion of references to comparative embryology. Brief references to the literature have been made here and there for the convenience of the student, but no elaboration of a bibliography has been undertaken. On its technical side description of the simple and the more common operative measures has been detailed, while procedures suitable only to performance in hospitals or by specialists have been more briefly set forth. The volume gives compact expression to the Edinburgh School of Midwifery.

A Text-Book of Surgery for Dental Students. By G. Percival Mills, M.B., B.S., F.R.C.S., Surgeon to the Royal Orthopedic and Spinal Hospital, Birmingham, and Humphrey Humphreys, M.B., Ch.B., L.D.S., Demonstrator on Dental Surgery at the Birmingham Dental Hospital. Cloth. Price, $3.50 net. Pp. 340, with illustrations. New York: Longmans, Green & Co., 1913.

This book is for students and practitioners of dental surgery. In view of the fact that the development of modern bacteriology has thrown much light on the relationship of the mouth to the general health, bacteriology has been treated somewhat fully. The chapter on this subject contains probably all that it is necessary for a dentist to know of bacteriology, provided that he will attempt to do only such things as his knowledge warrants. If he is to encroach on medical fields, he will find that more information is necessary for him than is contained in this book. The pathologic and clinical aspects of inflammation are considered in a simple manner, but the discussion on gangrene leaves much to be desired. Thus the treatment of gangrene would seem to concern only the toes and feet, since no mention is made of noma and related diseases of the mouth. The discussions on tetanus, tuberculosis, actinomycosis and syphilis are likewise very poor. Thus, in the advice regarding the treatment of syphilis, in no instance is the statement made that the patient should be referred to a physician. Note also the following statement: "A point of particular importance is the time when it is safe to allow a syphilitic patient to marry. The general rule followed is twelve months after all manifestations of the disease have disappeared." No mention is made of the Wassermann reaction. There are fairly good discussions on tumors and cysts; on goiter; a chapter on diseases of the eye, and other items whose relation to dentistry is not very apparent.

Genito-Urinary Diagnosis and Therapy for Urologists and General Practitioners. By Dr. Ernst Portner, Specialist for Urology, Berlin. Translated by Bransford Lewis, M.D., B.Sc., Professor of Genito-Urinary Surgery, Medical Department of St. Louis University. Cloth. Price $2.50. Pp. 221 with 43 illustrations. St. Louis: C. V. Mosby Company, 1913.

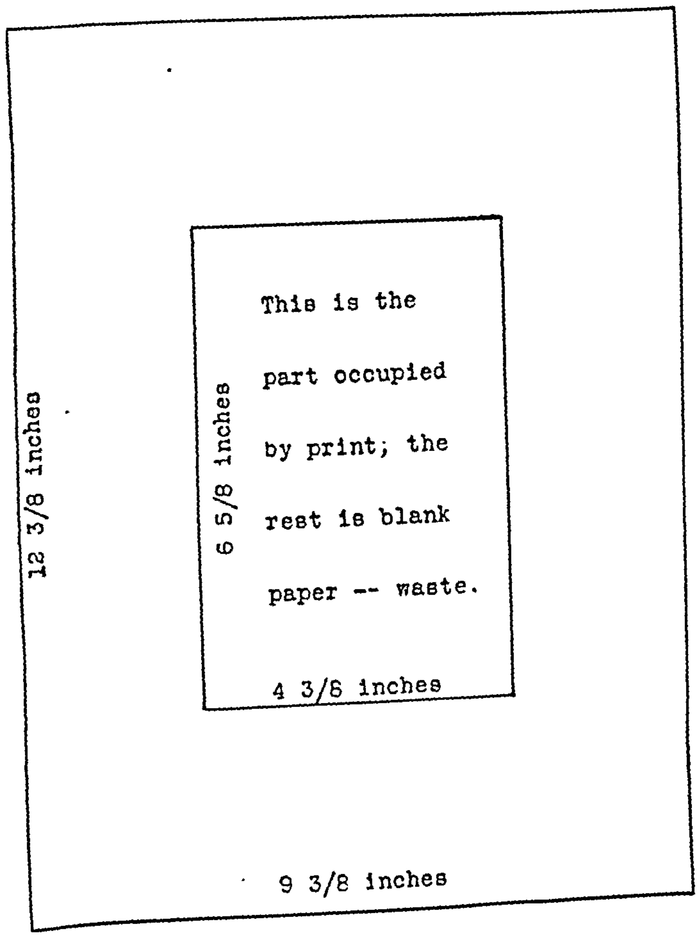
This book presents in a concise form a practical treatment for genito-urinary diseases. It deals entirely with therapy, furnishing the information that the practitioner most desires and needs in the treatment of urinary cases. Pathology, symptoms and diagnosis are mentioned only occasionally and then only to bring out or to drive home a therapeutic point. There is no padding and no attempt is made to give the history of any method of treatment, nor is mention made of a large number of more or less obsolete therapeutic methods. The advances made in the last few years in the study of the gonococcus are discussed fully. The diagnosis and cure of gonorrhea by the use of the gonorrhea complement-fixation test, and the allergy reactions are fully described.

The Origin and Nature of Life. By Benjamin Moore, M.A., D.Sc., F.R.S., Johnston Professor of Biochemistry, University of Liverpool. Cloth. Price, $0.50. Pp. 256. New York: Henry Holt & Co.

All those whose interest in this subject was reawakened by Schäfer's presidential address last year to the British Association will welcome this little book. Like Schäfer, Moore also believes that "life probably arose as a result of the operation of causes which may still be at work to-day causing life to arise afresh." He briefly discusses the genesis of electrons and atoms, chemical evolution in the suns, chemical compounds on earth, building materials for living matter and evolution of colloids, the study of which in the last decade has become the center of feverish industry. Coming to the origin of life on earth he holds that, as the evidence of geology shows, life appears in a cooling planet as soon as temperature will permit. At first it is evident that spontaneous production of such a thing as even a bacterium or other unicellular organism would by no means solve the problem. The new-born cell would have no organic pabulum and must perish. Inorganic colloids must first develop and in turn one of them must begin to evolve, not a living cell, not even a complex protein, carbohydrate or fat, but some quite simple form of organic molecule which must possess the property of transforming sunlight or some other form of radiant energy into chemical energy. Later this simple organic compound would begin to condense and form more complex organic molecules; and finally complexes of inorganic and organic matter would come into existence as crystallocolloids. Thus without any hiatus life would be led up to and inaugurated.

Studies in Cancer and Allied Subjects. Conducted under the George Crocker Special Research Fund at Columbia University. Volume I—The Study of Experimental Cancer. A Review. By William H. Woglom, M.D., Assistant Professor, Columbia University. Cloth. Price, $5 net. Pp. 288, with illustrations. Volume III—From the Departments of Zoology, Surgery, Clinical Pathology and Biological Chemistry. Price, $5 net. Pp. 308, with illustrations. New York: Columbia University Press, 1913.

The first volume contains an extensive and valuable review of the more recent experimental work on cancer. Quite a number of the articles in the third volume have been printed before. They bear more or less directly on the problems of cancer and show that cancer is being investigated by special workers in many departments of Columbia University. As pointed out in the notice of the second volume of this series of reports there are serious objections to the form of the book. The volumes are unwieldy and too large for many book-shelves; the blank margins are so unusually and needlessly wide that only a quarter of the page is occupied by print; three-quarters of the paper is unused. The third volume weighs 4½ pounds; hence about 2 pounds of good, white paper are wasted in every volume to no other purpose than annoyance to the reader and librarian and increased expense for postage and expressage. How will Columbia University justify this foolish waste of the George Crocker Special Research Fund?


This is the part occupied by print; the rest is blank paper -- waste.
6 5/8 inches
4 3/8 inches
12 3/8 inches
9 3/8 inches

Proportion of print and blank paper.

Coprostasis: Its Causes, Prevention and Treatment. By Sir James Sawyer. Cloth. Price 2 shillings 6 pence. Pp. 74. Birmingham: Cornish Brothers, 1912.

Coprostasis is a rather stately Greek title for the familiar subject of constipation. The book consists of two lectures on the subject, and lest one might forget what he said in the first the author repeats much of it nearly word for word in the second. Line upon line and precept on precept is a good proverb, but hardly suited to the temper of the readers of modern medical literature, who are accustomed to look for something new. Sir James deprecates the use of drugs, but when ordinary methods, of which he recommends diet, exercise, and a suitable position during defecation, are exhausted, he resorts to them; and drawing from his own extended experience he recommends aloes as if it were almost a personal discovery. The author is fond of honey; he tells us that it should be pure, that in his county excellent honey is furnished by the Warwickshire Beekeepers' Association, and that it may be spread on bread. He also permits the use of ginger-bread and biscuits, and even suggests making them with oatmeal instead of wheat flour. Further he says, "As to beverages, either oatmeal water or prune tea are helpful and may be drunk hot, warm or cold." All this is, to be sure, very good advice, but the reader is continually tantalized with the hope that some new method will soon be mentioned. Even his favorite crouching position in defecation is not new. It is bad enough to have had such stuff once encumbering the pages of the *Lancet*, but to publish it in book-form is too much. The author highly recommends the enema, but says that it can be given properly only through an O'Beirne's tube which, it seems, will extend through the sigmoid flexure. We wonder whether he has ever confirmed this by the Roentgen ray! Other workers appear to have failed in this attempt. There are perhaps some important hints in the book, but we have failed to find them. It would have saved trouble to the author and the reader to have printed them separately and to have thrown the rest away.

Applied Bacteriology for Nurses. By Charles F. Bolduan, M.D., Assistant to the General Medical Officer, Department of Health, New York City, and Marie Grund, M.D., Bacteriologist, Research Laboratory, Department of Health, New York City. Cloth. Price, $1.25 net. Pp. 166, with 62 illustrations. Philadelphia: W. B. Saunders Company, 1913.

The subject of applied bacteriology is presented clearly and concisely in this book, which is written in an interesting and readable style. There are two main heads—general bacteriology and special bacteriology. Under the first are chapters on the character of bacteria, the methods of studying bacteria, the preparation of stained smears, the cultivation of bacteria, disinfectants and antiseptics, sterilization by heat, relation of bacteria to disease, transmission of infectious diseases, and immunity. In the chapter on the transmission of infectious diseases great stress is laid on "carriers" and little on "fomites." To quote: "The knowledge we now possess on this subject proves that infectious diseases are transmitted by persons rather than by things, by contact with others, by certain discharges of those who are infected and by insects and vermin." The division on special bacteriology includes the various infectious diseases, bacteriology of milk, fermented milks, bacterial food poisons, bacteriology of water, animal parasites, practice of disinfection, collection of material for bacteriologic examination, and other important pathogenic micro-organisms. The work is not too technical and treats the whole subject in such a way as to be entirely suitable for the use of training schools.

Clinical Pathology. By P. N. Panton, M.A., M.B., B.C., Clinical Pathologist to the London Hospital. Cloth. Price, $4 net. Pp. 446, with 58 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

The author attempts to describe in a reasonable compass such laboratory investigations as have a practical bearing on diagnosis and treatment. No list of references is given, and the names of authorities unless definitely associated with a special reaction are for the most part omitted. The text is divided into eight sections—on blood, bacteriology, puncture fluids, urine, alimentary system, eye and skin, respiratory tract and histology. We question whether there is need for a work of this kind. It is neither a book on clinical diagnosis nor a clinical pathology. It contains much of normal histology and laboratory technic and comparatively little of real clinical pathology. Within the limited space of four hundred pages the author has tried to write a number of compends. The most pretentious chapter is the one devoted to bacteriology. There is no evidence of tests or clinical pathology. Twenty-five pages are given over to a consideration of the bacteriologic, chemical and microscopic examination of puncture fluids; thirteen pages are devoted to histologic methods. This work savors too much of the compend, which is not what a work of this size should be.

Disease of the Rectum and Pelvic Colon. By Martin L. Bodkin, M.D., Rectal Surgeon, St. Mary's Hospital, New York. Cloth. Price, $3.50. Pp. 416 with 90 illustrations. New York: E. B. Treat & Co., 1913.

In his description of the anatomy of the anus, rectum and pelvic colon, Bodkin brings out many minor anatomic points that are of paramount importance clinically, the knowledge of which is absolutely essential to a proper understanding of the symptoms, clinical course and treatment of many rectal diseases. The chapters on rectal carcinoma and rectal stricture give well-tried and proved methods of treatment. In the chapter on hemorrhoids, several operative technics are minutely described. The point is made that the treatment should be adapted to the type and the location of the hemorrhoid in each case. Local anesthesia is recommended, and urged in all cases that do not require a stretching of the sphincter. The ordinary pyrography cautery is recommended as efficient and is used by the author in place of the more expensive instruments. The chapters on fissure and fistula give in detail the technic necessary to diagnose and treat these common pathologic conditions. The technic of packing the rectum for hemorrhage by using the Pennington tube is well described and illustrated.

# Medicolegal

## Construction and Enforcement of Contract with Assistant Agreeing Not to Practice Afterward in Same Town

*(Styles vs. Lyon (Conn.), 86 Atl. R. 564)*

The Supreme Court of Errors of Connecticut affirms a judgment overruling a demurrer to a complaint to enforce a contract entered into between the plaintiff and the defendant, by which the defendant, a physician and surgeon, agreed for a stipulated consideration to take charge of the plaintiff's business as a physician and surgeon in a named town, and that, in case of a termination of the contract, he would not locate or open an office within the limits of the town for the practice of his profession. The contract was made in 1908, for a period of one year, continued, and, in 1912, the defendant left the employ of the plaintiff, and subsequently opened an office for the general practice of medicine in said town.

The continuance of the contract the court says may have been by renewal from year to year, or by general agreement or acquiescence of the parties. If its continuance was under a general agreement or acquiescence, all of its provisions, so far as applicable, remained in force; and such provisions as were inapplicable to the period beyond the term of the original contract ceased to be effective. The only provision of the contract falling within this ineffective class was that providing that the contract should continue "for a period of one year." Obviously this could apply only to renewals of the contract for the term of one year. The provision of restriction was a necessary part of the contract, containing, as it did, protection for the experienced practitioner against the taking away of his practice by his assistant on leaving his employ, in which the assistant had had the opportunity to gain the confidence and favor of the patients of his employer. The continuance of the contract continued the restriction.

A contract of this character, if not against public policy, is valid if it be founded on a legal consideration and be reasonable. A contract in partial restraint of trade will not, as a rule, be held to be against public policy, unless it unduly interferes with the interests of the public. There was no attempt by this restrictive provision to restrain the defendant from pursuing in an extended territory his vocation for either an indefinite or a limited time. The area of restriction was confined to a single city; the rest of the world was open to him. Under such circumstances, it could not be said that the defendant's liberty of pursuing his profession was interfered with to such an extent as to be unreasonable or to work injury to the public. Moreover, the consideration of the contract was a valid one; its adequacy was not open to inquiry in an examination of the legal validity of the contract.

The test of the reasonableness of this contract was met by answering affirmatively the question, Does it afford a fair protection to the interests of the employer in whose favor it is made? The area of restriction was limited to the place of practice. Without the aid of the restriction, the defendant having won the confidence of the plaintiff's patients might breach his contract, and take away from him the very patients whose confidence he had gained while in the plaintiff's employ. There was no other effective way by which the plaintiff could protect himself in his livelihood except by preventing the defendant from wrecking his practice.

The defendant insisted that there is a distinction between a business and a profession; that, while the period of restriction as to a business may be unlimited, the rule should not apply to a profession, since it is a purely personal relation whose benefits cease on death or the cessation from practice. The court does not think the distinction tenable. A profession partakes on its financial side of a commercial business, and its good will is often a valuable asset. It is true that the profession has its personal side, but it is not true, except under exceptional circumstances, that a professional man is indispensable to any community. The distinction sought is made in a few cases, but generally the courts do not recognize it and almost uniformly follow the rule that the mere fact that the duration of the restriction as to time is indefinite or perpetual will not of itself avoid the contract if it is limited as to place, and is reasonable and proper in all other respects.

The authorities generally are in accord on the rule of law governing this action. A contract between an employer and employee providing for the restraint of the latter, after ceasing to be in his employ, from continuing in a similar employment, will be sustained if it be not against public policy, and be not unreasonable under the circumstances of the case, and be made on good consideration. The facts of the complaint—and each case must be governed by its own facts—showed no circumstances of hardship attendant on the making of the contract and no advantage taken of the employee and no wider restriction than was reasonably necessary for the protection of the employer; therefore, the restrictive covenant could not be held to be unreasonable.

The restriction, though in specific terms not limited in time, was by the fair construction of other provisions of the contract limited to the lifetime of the defendant. Whether if the plaintiff had ceased to practice his profession, and had not transferred his practice to a successor, a court of equity would enforce the restriction in his behalf need not be determined, for the facts as admitted by the demurrer did not present that case, but one in which the defendant had remained in the plaintiff's employ for four years, and the plaintiff had resumed his practice, and was seeking to protect himself in his practice by having the restrictive provision of his contract enforced. Some of the authorities hold, and not without apparent reason, that when the professional man has ceased to practice, the enforcement of the restriction would not benefit him, and would be an unreasonable hardship on the covenantor, and therefore the restriction is, under the then circumstances, unreasonable, because it has ceased to furnish a fair protection to the covenantee. The hardship of enforcing a contract in behalf of one who has no present benefit from the contract and no reasonable probability of any in the immediate future would incline a court of equity to hold such a construction of the contract without the fair intent of the parties to the contract and lead it to refuse its aid.

### Liability for Leaving of Sponge in Abdominal Operation—When Responsibility Cannot Be Put on Nurses—Effects of Pleadings

*(Palmer vs. Humiston (Ohio), 101 N. E. R. 283)*

The Supreme Court of Ohio affirms a judgment for $5,000 damages rendered in favor of the plaintiff for alleged malpractice in negligently leaving a sponge in the performance of an abdominal operation. The court says that the pivot of this case was in the particular pleadings, especially the defendant's answer wherein he admitted the contract to perform the surgical operation, and admitted that "in the performance of said operation it was necessary that certain gauze or cheese-cloth sponges be used." The issues of a case are defined by and confined to the pleadings. Under the pleadings of this case the use, care and removal of such sponges were a part of the operation contracted for. In such a case the use of the sponge becomes a part of the operation as much as the use of knife or needle would become a part of this operation, and, if the use of the sponge be a part of the operation, it must follow as a corollary that the removal of the sponge at the end of its use becomes also a part of that operation.

By way of further illustration and argument, suppose that in the operation a large number of instruments was used, and, in addition to keeping tab on the number of sponges, the head nurse or some third party had kept tab on the number of instruments used and placed within the body, and had made an error in the count, whereby one of the instruments was left in the body; would it be seriously contended that this was not a part of the operation, and that the surgeon was not liable, but that the nurse alone was liable?

The defendant, therefore, having admitted the contract to perform the operation and the use of the sponges as necessary thereto, assumed the full measure of professional responsibility, which is the average care and skill of the profession at the time and in the place of the operation, which must include everything connected with the operation, the use of foreign substances, and also the removal of those foreign substances when the operation is finished.

The defendant undertook to excuse himself from that full measure of care and skill personally by claiming through his counsel that in the performance of such operation it was necessary in careful and skilled surgery to secure the assistance of certain nurses, interns and associate surgeons in and about the hospital, and that included among these was one Miss Kelly, the head nurse, to whom he intrusted the duty of counting the sponges before putting them into the body and on removing them from the body, and that he relied on the accuracy of her count, and that, if there was any error in her count, he, the surgeon, was not responsible. This was a hybrid sort of confession and avoidance, first confessing that he contracted to perform the operation, and that in connection therewith and as a part thereof it was necessary to use sponges, etc., and then, for the purpose of avoiding his full measure of professional and legal liability, contending that, if there was any negligence in failing to remove any sponge, such failure was the negligence of the nurse who did the counting, the adding and the subtracting of the sponges. But no such issue was raised by the pleadings. The defendant could not in his answer admit the employment to perform the operation and admit that in the performance of said operation it was necessary that certain gauze or cheese-cloth sponges be used, and then thereafter undertake to say that that particular part of the operation involving the use of those sponges was in somebody else's hands or head, for whose negligence, if any, he, the operating surgeon, could be held responsible. The defendant must stand on his contract of employment, and his negligence must be determined accordingly. If he was responsible for the proper use of the sponge, about which there could be no doubt under the pleadings and the inferences and deductions which must follow from them, he was likewise responsible for the proper removal of the sponge. The one must follow the other in logical sequence and legal liability.

If one is pleading a defense to a contract set forth in the petition, he may, first, deny the contract; or, secondly, he may admit it and say its terms have been fully kept on his part; but if he admits the contract, and avers that he has fully performed, he cannot thereafter claim that he secured a waiver of certain parts of it. In order that the waiver can avail him, he must plead it. Third, in order that he may stand on a supplementary contract, he must plead it. Fourth, if he is relying on a professional custom or usage obtaining among good surgeons at the time and in the place in which the operation is performed, which would avoid the liability charged, he must specially plead that particular usage or custom, and his pleadings in general must be harmonious and consistent; that is, the particular custom or usage must not conflict with or contradict the remainder of the defendant's pleading.

In this case there was no issue of agency. In order to make evidence relative thereto available, and to excuse the surgeon from any negligence on the part of the head nurse or any of his assistants, it was necessary to specially plead such usage or custom then generally in use at the time and place of the operation.

The record unmistakably presented the ghastly fact that a large gauze sponge, 14 inches square, was left in the abdomen just under the abdominal wall for more than six months after the operation. Whether this fact was due to the negligence of the surgeon, whether it caused the plaintiff any of the great pain and suffering, physical and mental, set forth in the pleadings, what the amount, if any, was her damages, were all properly questions for the jury and the courts below. With these this court has nothing to do.

### No Case Made Against Roentgen-Ray Specialist—Limit to Doctrine of Res Ipsa Loquitur

*(Sweeney vs. Erving (U. S.), 33 Sup. Ct. R. 416)*

The Supreme Court of the United States affirms a judgment in favor of the defendant in this action to recover damages for personal injuries sustained, as was alleged, through his negligence in the making of certain Roentgen-ray tests on her body with the use of apparatus owned and operated by him. The plaintiff adduced evidence tending to prove that she was under treatment by a Dr. Kerr for the fracture of a rib, claimed by her to have been caused by the negligence of a railway company, which denied the existence of such fracture, and that Dr. Kerr arranged with the defendant, a specialist in the use of the Roentgen ray for diagnostic purposes, for a Roentgen diagnosis to be made by him, and that on her fourth visit to his office she suffered a Roentgen-ray burn. The court does not consider that there was error in a refusal to instruct the jury at the plaintiff's request that, "If you believe on the evidence that in the course of the operation of the Roentgen apparatus by the defendant the plaintiff was burned, that fact is of itself evidence of negligence on his part, and casts on him the burden of proving, if he can, by a preponderance of evidence, that the plaintiff's injury was not caused, in whole or in part, by his negligence; and in such case, unless you find by a preponderance of the evidence that said injury was not caused in whole or in part by the defendant's negligence, your verdict should be for the plaintiff." Instead, the jury was instructed that "the burden of proof is on the plaintiff to establish by a fair preponderance of the evidence that the burn on her back was caused by negligence on the part of the defendant in the manner in which he subjected her to exposure by the Roentgen ray." The plaintiff's special reliance was on what is called the doctrine of *res ipsa loquitur*, or the thing speaks for itself. But, in the court's opinion, *res ipsa loquitur* means that the facts of the occurrence warrant the inference of negligence, not that they compel such an inference; that they furnish circumstantial evidence of negligence when direct evidence of it may be lacking, but it is evidence to be weighed, not necessarily to be accepted as sufficient; that they call for explanation or rebuttal, not necessarily that they require it; that they make a case to be decided by the jury, not that they forestall the verdict. *Res ipsa loquitur*, when it applies, does not convert the defendant's general issue into an affirmative defense. When all the evidence is in, the question for the jury is whether the preponderance is with the plaintiff.

Again, the court says that it did not appear that there was any evidence on which the jury could properly base a finding that there was danger of injury to the plaintiff by reason of her condition or of any other matter tending to predispose her to such injury; nor to sustain a finding that such possibility was known to the defendant, or by proper study or inquiry should have been known to him. Nor could it be said, as matter of law, that the defendant had undertaken any duty requiring him to make special study or inquiry respecting the plaintiff's condition or the possibility of injury to her, or to advise her of such possibility of injury; for there was testimony that would have warranted a finding that Dr. Kerr had assumed the responsibility of advising the plaintiff respecting the propriety of her submitting to the operation.

# Society Proceedings

## COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

*Meeting held Oct. 27, 1913*

First Vice-President, Dr. T. Passmore Berens, in the Chair

### Neoplasms of the Bladder; Operative Treatment

**Dr. Francis R. Hagner**, Washington, D. C.: All tumors of the bladder are clinically malignant. Unless they are removed by some operative means they either directly or indirectly cause the death of the patient. At present all seem to be agreed that the Oudin current offers better chances of success than any of their earlier treatments. It is imperative to examine these patients cystoscopically at regular intervals, and to remove at once any evidence of recurrence. My method was first published in November, 1910.

### DISCUSSION

**Dr. Edward L. Keyes, Jr.**: My statistics compare very favorably with those of Dr. Hagner, but one cannot deny that his method gives new hope in desperate pathologic conditions. The disparity between pathologic conditions presented and the general condition in these cases has more than once been forced on my attention. Many cases do not permit of an early diagnosis because there are no symptoms present. In many cases the high-frequency current is of no use. The tumors that can be aided by the high-frequency current are those that are clinically benign. There are several characteristics which aid one in differentiating benign and malignant tumors, two of which are of special importance. The first is the sloughing on the surface of the tumor. Such tumors can be controlled by the high-frequency current. Clinically they are malignant. In the second place there is the tumor of very virulent and intractable form, with which cystitis occurs with an infiltration of the bladder wall. It is impossible to see these tumors without the aid of the cystoscope. Because of the cystitis the use of the cystoscope is very painful. These are the cases that cannot be controlled by the use of the high-frequency current. It is obvious that tumors that can be seen or felt through the rectum cannot be controlled by the high-frequency current, and these are the cases that should be subjected to a radical, open surgical operation.

**Dr. Leo Buerger**: One point brought out by Dr. Hagner should be particularly emphasized, and that is the importance of an early diagnosis. In the treatment of these cases it is most important to know whether the pathologic examination shows the growth to be a carcinoma or a papilloma. The safest data in making the diagnosis of carcinoma of the bladder are those revealed by the cystoscope. When the papilloma is single, pure fulguration should not be employed, because it is slow. One should bite off as much of the base of the tumor as possible, as well as some of the surrounding tissue. If the tumor grows deeply in the muscular tissue it is carcinoma. If atypical cells are present the tumor is a carcinoma. Another important point was that there was in these cases an area of edema, and the microscope would show edema plus carcinoma. In every case one should look for this edema.

**Dr. Alfred T. Osgood**: The impression that the entire symptom-complex, or at least the cardinal symptom, must be present before tumor is suspected, seems to prevail. Tumor may exist in the bladder without symptoms or the signs of slight vesical irritability. Symptoms of cystitis are frequently due to or caused by the presence of tumor of the bladder. The cardinal symptom of hemorrhage is very frequently absent entirely and for a long period of time. Sometimes these cases are treated for months or even for years before a tumor of the bladder is discovered. It is the early diagnosis of these malignant tumors that I wish especially to emphasize. Many of these can be helped only by an early discovery of the cause of cystitis.

### Indications in Renal Surgery which Demand Immediate Operative Intervention

**Dr. Louis E. Schmidt**, Chicago: In a general way the urgent cases requiring immediate operation are those in which the conditions in or around the kidney threaten that organ with destruction, or if no relief by operative interference is given the general condition becomes so involved that the termination in most cases is fatal. Hemorrhage, no matter whether produced by injury or in the course of nephritis, tuberculosis, stone or neoplasm, gives rise occasionally to immediate intervention. The same may be said of anuria. It is, however, to the different types of acute nephritis that attention is especially directed. These are: (1) The acute parenchymatous type, which is produced by all well-known infectious diseases; (2) the acute suppurative type, which is exemplified so well by the colon bacillus infection, and (3) the acute toxic type, which is produced by many drugs and toxins. The significance of the passage of bacteria really has not been positively established, but it is my opinion that it is a distinct sign of the involvement of the kidney. Decapsulation probably relieves intrarenal tension, but it is improbable that it relieves intrapelvic tension or edema of the kidney so thoroughly as an incision through the organ into the pelvis. It is an absolute fact that urinary findings may be completely negative even in extreme cases.

It is impossible for a one-sided acute infectious nephritis to occur; if such an acute condition persists for any length of time certain agents are produced in the course of the destruction of the kidney which destroys the kidney cells. These bodies of nephrotoxic character, after gaining access to the circulation, are not only at once the source of the greatest danger in destroying the kidney cells of the involved side, but are equally important to the opposite side, producing similar destruction of the otherwise healthy kidney. If the process is not too far advanced there is at least only the destruction of a certain amount of kidney tissue. With the hope in view that the operative procedure will stop the further progress of the destruction of the kidney and of its opposite, there is also hope that by the operation the consequences to the system in general may be avoided. Under the circumstances the correct course to pursue is to undertake operative measures, particularly when all known conservative treatment has been of no avail. These procedures may vary as to the indication. In the severe hemorrhages the operative procedure should be guided by the condition, and this also holds true in cases of anuria. In groups 1 and 3, after all medical means have been used at least for a short time, operative interference is desirable and decapsulation is the operation of choice in these cases. If operation should be decided on in cases of acute infectious nephritis, especially in colon infection, the kidney should be exposed. If the involvement has not progressed too far, nephrotomy is the operation of choice; otherwise a nephrectomy should be performed.

### DISCUSSION

DR. GEORGE E. BREWER: We are all as yet unfamiliar with the indications for operation in certain renal conditions, especially those which demand immediate operative interference. There is no question in my mind but that there is abundant proof that micro-organisms in the blood may pass through the healthy kidney without producing structural changes. But, on the other hand, they may produce changes from sloughing, swelling, infiltrations and even destruction of the organ. What changes occur depend entirely on the virulence of the organism and the resistance of the kidney tissues. There is no doubt that any kidney that has been subjected to disease, or injury, or anything that causes hyperemia, is a kidney that is vulnerable to these organisms. As they attempt to pass through they may find lodgment and form an abscess. There are two general classes of these cases to be considered, the ordinary acute form and the hyperacute form. In the first class the patient is moderately ill and presents the text-book appearance of pyelonephritis or suppuration of the kidney, with which all are familiar. There is another class of cases so virulent that the patient dies before such changes as have been enumerated can occur. In this type the process is so virulent that even renal symptoms are not present. There is usually a beginning chill with a sharp rise of temperature to 104, 105, or 106 F. Associated with this there is intense prostration and pain on the affected side; this pain is often referred to the anterior abdominal wall, which is very misleading. An examination of the urine would show no particular change because the function of the kidney has been entirely suspended. Centrifuging the urine almost invariably will disclose a few blood-cells and often a trace of albumin. In these cases prompt surgical intervention is the only resource. In the staphylococcus or pneumococcus infection the type of the infection is so rapid that unless the kidney is promptly removed the patient will die because of the pronounced toxemia from the kidney, or a toxemia resulting from metastatic abscess in other parts of the body. These are the cases that demand immediate surgical intervention. A careful urinary examination should be made in all these cases with centrifuging.

DR. JOHN F. ERDMANN: In certain instances of streptococcus infection of the kidney there is a possibility of mistaking the condition for gall-bladder trouble or infection of the liver. Clear bile will be found. On careful palpation of the kidneys a pyelonephritis may be determined. If a nephrectomy is done fewer of these patients would be lost.

DR. J. BENTLEY SQUIER: A woman entered the hospital because of frequency of urination and hematuria. She was acutely ill for a time and then the condition subsided, but came on again, the hematuria being very profuse. An exploratory operation was resorted to, but no condition was discovered which called for the removal of the kidney, so it was sutured back in place, decapsulation having been performed. The frequency of urination and tenesmus disappeared and the patient was perfectly comfortable for eighteen months, when the hematuria again appeared. The kidney was again exposed and was found embedded in a dense adherent capsule. Nephrectomy was performed. On section the condition was found to be a typical case of essential hematuria with chronic arteriosclerosis. The decapsulation operation was merely palliative and resulted well until the adhesions and fibrosis formed. In a second case coming under my notice the patient was relieved for two years by decapsulation, when there was a recurrence of the symptoms. The report of these two cases does not prove anything conclusive, but I believe that with more experience with decapsulation we will find it to be a palliative operation and not by any means a curative one. Decapsulation is applicable to anuria as well as to hematuria.

## MEDICAL SOCIETY OF VIRGINIA

*Annual Meeting held at Lynchburg, Oct. 21-24, 1913*

*(Continued from page 1930)*

### Intracranial Traumas at Birth

DR. JOHN F. WINN, Richmond: A fundamental necessity in the prevention of this accident is more clinical training of students, and some satisfactory disposition of the question of ignorant midwives. Hemorrhage is not necessarily dependent on bone lesions. Pressure may arise from hemorrhage or fracture, or from external pressure on the cranium without fracture. Overlapping of the parietal bones is the chief cause of hemorrhage. Respiratory embarrassment is a factor in the production of intracranial hemorrhage. Cardiac irregularities are often a sign pointing to conditions productive of hemorrhage. The "blue baby," especially, must be watched. The effusion of a considerable amount of blood may occur before signs of increased pressure appear. Thus, two or more days may elapse before the condition can be recognized.

In the prophylaxis of the condition I would emphasize: More routine practice of pelvimetry and fetometry on every primipara and every multipara with a history of dystocia or stillbirth. Accurate diagnosis of the presentation and position of the child prior to labor, and certainly when labor begins, coupled with a thorough knowledge of the mechanism of the contracted pelvis. The cultivation of that watchful expectancy which is necessary for the recognition of the indications of dystocia. A more intimate knowledge of the indications for and correct application of forceps. Forceps should never be used to pull down the unmolded head. Failure to remember that sudden or prolonged pressure by forceps results in dangerous compression of the child's brain. The unskilled use of forceps is more often the cause of compression than the rather infrequent high degrees of pelvic contraction. Routine and careful study of the fetal heart-tones will result in the diminution of this accident. The more general practice of the simple operation of symphysiotomy will likewise reduce the number of asphyxiated infants and cranial accidents.

### *Birth-Trauma in Epilepsy and Insanity*

DR. BEVERLEY R. TUCKER, Richmond: Epilepsy attributable to birth-traumas should be classed as jacksonian. I am inclined to believe that there is a cerebral cell lesion in every case of epilepsy, and that there is no such thing as an idiopathic type. Many cases are due to birth accidents, though the figures are not reliable. The date of appearance varies from very early infancy to adult life. In going over my records, I found fifteen cases apparently definitely due to birth palsy, varying between the ages of 13 months and 25 years. Cesarean section on the mother might have prevented some cases. We should not look lightly on the use of forceps. No person can have an epileptic fit without having a brain-tissue that is susceptible. Likewise, no person can become insane without brain-cell abnormality, except those due to toxins. Are not the failures of surgery due to delayed operations? If the operation were done early, many cases of epilepsy might be prevented. The first attack is usually not given enough consideration. As a cause of insanity I have been unable to fix definitely in my mind cases certainly due to birth-trauma. Some recent cases showing definite changes in the pituitary body showed definite improvement under the use of the hypophyseal extract. I believe that many more cases could be saved by surgical means, especially with the cooperation of the general practitioner, rendered immediately after the first convulsion.

### Surgical Treatment of Birth-Trauma

DR. CHARLES H. FRAZIER, Philadelphia: Hemorrhage in the new-born is almost always subdural, as in the adult. Instrumental delivery does not play so important a part as ordinarily supposed. One of the greatest difficulties in recovery is that the hemorrhage is so often bilateral. The determination of the location of the hematoma is the crux of the situation from the surgical point of view. Those above the tentorium are more easily recognizable than the subtentorial because the muscular symptoms are more prominent. In the subdural type, lumbar puncture will usually show signs of hemorrhage. It is further necessary to ascertain whether, in the pretentorial cases, the hemorrhage is unilateral or bilateral. Lumbar puncture should be done in all suspicious cases and also in cases in the subdural spaces of both sides. The first indication is to relieve the pressure. A small piece of muscle applied to the bleeding point will satisfactorily control the hemorrhage in most cases. To attempt to control it with ligatures is a difficult matter. The operative mortality is over 50 per cent. and will of necessity always be high. It should not be considered prohibitory. The ultimate prognosis has not been recorded.

The mentally defective, of either high or low grade, present no surgical aspect. The care for the increasing number of feeble-minded children is the most important economic problem of health boards. Spasticity is very different. Section of the posterior roots of the cord does relieve spasticity. It is not wise to do it in children of unsound mind, or for affections of the upper extremity. For some unexplained reason, the results are not comparable with those in the lumbar region. In the latter, in selected cases, it is unquestionably of benefit. The residual power is the influencing factor. It may be very difficult to tell. Generally speaking, at least five roots should be divided, usually the three lower lumbar and the first two sacral. Identifying the nerves is difficult, and shock a danger. Disappointment may result unless arrangements are made to reeducate the muscles over a period, it may be, of months.

The cases of epilepsy with general, as against focal, symptoms, are not suitable for surgical interference. Neither are they if it has persisted for years. But in the jacksonian, and in those cases in which the motor symptoms are worse than the psychic, surgery is often helpful. It is a mistake to estimate the advantage until at least five years have elapsed. The tendency to improvement at first is well known. It is extraordinary how extensive the lesion may be without any other symptoms than epileptic seizures. The most that can be said is that in exceptional cases operative intervention may prove beneficial. Rarely are the attacks entirely interrupted; more often they are reduced in frequency.

### Discussion on Birth-Trauma

**Dr. A. Barnes Hooe**, Washington, D. C.: Attention to the patient during pregnancy will prevent most cases of instrumental delivery and, therefore, of trauma. How many men to-day in general practice ever think of using a pelvimeter, or of examining a woman to see if there is a deformity? It is the duty of every man, as soon as he is engaged, to make himself acquainted with the conditions of the pelvic cavity.

**Dr. J. Bolling Jones**, Petersburg: I very seldom use a pelvimeter. I use the hand. We do not hesitate to cleanse our hands and do surgery, and, if we would only look on all obstetric cases as surgical, I do not see why we cannot cleanse our hands and make examinations when necessary. A pelvimeter is necessary, but I do not hesitate to say that the best is the index-finger, and I use it with impunity, provided it is surgically clean.

**Dr. J. Shelton Horsley**, Richmond: In very young children the sinuses are usually not adherent to the bone, and the mechanical details of operation are easier than in the adult. Necessarily, though, the operation is quite dangerous. It has to be done quickly and gently. Very often little dents will come in a child's skull without a fracture. A few slight strokes at the edge, or an elevator underneath, will pop it up like a dent in a derby hat. I do not believe that such a dent should be left uncorrected. If it is necessary to open the cortex, we cannot be too gentle. There is nothing that will injure the cortex so easily as dry gauze. It should be gently irrigated, or cotton or gauze soaked in solution used.

**Dr. Hugh M. Taylor**, Richmond: It is all-important to bring this subject to the general practitioner. Its whole fate is in his hands. If he is watching for these cases, he will recognize them. If the indications for decompression could be recognized and carried out successfully, we would close the doors of the epileptic and similar institutions. If we could trace back not only the epileptic, idiotic and insane, but all these abnormal children, classified as such in school, it would be found that the recognition of the condition by the general practitioner is the key to the whole situation.

**Dr. Greer Baughman**, Richmond: I think that 50 per cent. of epilepsy would cease if all cases of pregnancy were examined by pelvimetry and externally at the end of the sixth month. The necessary knowledge of the pelvis should be acquired sufficiently long before the delivery so that you can prepare yourself. The internal measurement is not needed if we have a normal external measurement, save in the most exceptional cases, so that at the end of six months we can determine and prepare to do what is necessary.

**Dr. Virginius Harrison**, Richmond: We are generally taught to believe that these cases are instrumental. Mine have been chiefly rapid deliveries with a very small child or a very large pelvis. I think it is well to keep that in mind, so we shall not think that because no instruments were used, there is necessarily no brain trauma.

**Dr. Charles A. Saunders**, Norfolk: You can measure the passage, but I do not see how you can measure the passenger. I do not see the value of measuring the one if you cannot measure the other.

**Dr. John F. Winn**: Some comparative estimate may be made of the size of the head and pelvis by vaginal examination. Examination made in the sixth month will make unnecessary frequent examinations during labor. It is not so much the cases of high degree of contracting that embarrass us. They are plain; we know what to do. It is the cases known as border-line.

**Dr. Beverley R. Tucker**: The number of children delivered by midwives occurs to me as a possible explanation of so many cases of epilepsy arising from birth-trauma. When an obstetrician is at a labor case he performs a service just as important as when a surgeon removes an appendix. All men who have seen epilepsy will bear out the statement that if you want to do anything for epilepsy you must do it early. Seven out of ten I have seen were told it was due to indiscretion in diet, or some senseless thing like that. From whatever point you are going to investigate it, start just as soon as the convulsion first takes place, and never lie to the family or fool yourself. If the attack is accompanied by convulsion and unconsciousness, it is epilepsy and the diagnosis is easy. The mother would make it herself if she were not persuaded by the physician.

### Prevention of Malaria

**Dr. Frank H. Hancock**, Norfolk: The Virginia Society for the Study and Prevention of Malaria makes a special appeal to the laity in Norfolk. The society has provided moving pictures showing the marshes before drainage swarming with mosquitoes, and after drainage with the mosquitoes gone. Another film to be exhibited is to show the appearance of the people living in the affected districts and their improvement after the mosquito has been exterminated.

### Intussusception

**Dr. William Goodwin**, Charlottesville: Success in treatment will depend on early diagnosis of the condition by the general practitioner, and the patient's reaching the surgeon for an early operation. Sudden paroxysmal pain, and the vomiting of blood, with little or no fecal matter, should warrant tentative diagnosis. A mass may, or may not, be felt. It would be better to operate in a case of colitis than not to operate in intussusception. In adults the condition is more difficult of diagnosis. The surgical nature, however, can be made out, and the indications are for laparotomy. All patients should be operated on. In young children, after forty-eight hours, the prognosis is bad. The mesentery, if elongated, should be shortened to prevent recurrence, or the cecum may be attached to the lateral abdominal wall.

DISCUSSION

Dr. Stephen H. Watts, Charlottesville: I wish to emphasize the importance of reducing the intussusception by the method of Senn—pressure on the intussuscipiens rather than traction on the intussusceptum.

Dr. J. Shelton Horsley, Richmond: One patient after having a temperature of 105 F. for the first twenty-four hours, recovered; another died within a short while. Two cases were resected; one though easily reduced was resected, bearing in mind the fatality referred to previously. Children rapidly absorb toxins and become overwhelmed. It has been proved that these toxins are formed within the mucous membrane itself. The squeezing of the bowel, by the telescoping, together with the interference of the circulation, tends to form this toxic material, which has been isolated. If the intussusception is reduced, this overwhelming amount of toxic material may be carried into the circulation and overwhelm the patient, and death follow in a short while. So your troubles are not always over when reduction is accomplished. Therefore, I believe in some cases, even if reduction is possible and gangrene not apparently imminent, it is well to resect and obtain healthy bowel together with an end-to-end suture.

Dr. John W. Dillard, Lynchburg: I saw a baby not quite 4 months old whose appendix was entirely swallowed up in the intussusception. The intussusception was reduced, and the appendix found diseased and blue. The appendix was by actual measurement found to be 4 inches long. The patient made a good recovery.

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## CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

*Fourth Annual Session, held in Chicago, Nov. 10-15, 1913*

*(Continued from page 2011)*

### Roentgenotherapy of Benign and Malignant Tumors

Dr. Kronig, Freiburg, Germany: I have treated 350 cases of myomas of the uterus with Roentgen rays. The chief aim is (1) to diminish the size of the tumor and (2) to lessen the severity of the hemorrhage, but without absolute amenorrhea. I have many times attained this end, especially in younger persons, but I must confess that I have seldom gained the desired object. Shrinkage of the tumor begins only when amenorrhea is gradually established, and relapses are frequent if menstruation has not completely ceased. Roentgenotherapy for myomas of the uterus is far superior to operative treatment by means of total extirpation or by supravaginal amputation of the myomatous uterus.

I have treated 254 cases of cancer with Roentgen rays and radium. The material includes those cases treated for the prevention of the secondary growth after operation for carcinoma, as well as those cases in which roentgenotherapy for carcinoma has been used therapeutically. Of this number 150 cases were treated on purely therapeutic lines and without operation. Of these, 140 were treated with the Roentgen ray and mesothorium combined. Of 64 cases of carcinoma, 43 were treated for the prevention of secondary growth almost exclusively with unfiltered Roentgen rays, while 21 cases were treated partly with filtered and partly with unfiltered rays. The difference is striking. While 32 out of 43 patients died of carcinoma, the subsequent history of 20 patients showed that 60 per cent. of the recurrences occurred the first year after operation.

Thus far we have not succeeded in curing a single case of metastatic carcinoma. It is quite possible to produce remarkable retrogressions and checking of the carcinomatous metastases by means of intense radiation of Roentgen rays and radium, but in all cases the carcinoma later spread further. We have not saved a single patient.

DISCUSSION

Dr. Howard A. Kelly, Baltimore: I have used radium in 366 cases, of which 188 were malignant growths, including tumors of all parts of the body—mouth, throat, nose, neck, lower part of the abdomen, the uterus, etc. I have treated forty cases of cancer of the lower part of the uterus, where the disease is apt to spread rapidly. The cases were considered hopelessly advanced and inoperable, and in three of them, after extensive operation, radium was used. In these three instances there has been no recurrence and health has been fully restored. I have also had four cases in which no operation could be done on account of the general condition of the patients. Two of these patients had diabetes, one Bright's disease, and the other a serious ailment which contra-indicated operation. In these cases apparently a cure has been effected. I have had two patients with cancer of the larynx, one of whom has been well for months, and the other appears to have recovered, but is still under observation.

### Diagnosis of Lesions of the Upper Urinary Tract

Dr. Hugh Cabot, Boston: We have now at our disposal methods of diagnosis of lesions of the upper urinary tract and abdomen which are of extreme accuracy. They are not being used with sufficient frequency, and therefore a large percentage of errors in diagnosis are being made. These methods require skill and judgment in their application, and without that skill and judgment they are dangerous.

DISCUSSION

Dr. Arthur D. Bevan, Chicago: We need in each clinic a complete organization, a surgeon, a cystoscopist, a roentgenologist, a competent laboratory worker and an internist. In making a diagnosis of lesions of the upper urinary tract, and in practically all abdominal work, the evidence which we desire to obtain can easily be grouped under four heads according to their value: (1) the history, which in a given case of lesions of the upper urinary tract is more valuable than anything else; (2) proper physical examination, including an examination for tumors, dilatation of the colon with air, cystoscopic examination, catheterization of the ureters, and roentgenograms of the region with or without collargol; (3) the laboratory findings, and (4) in a limited number of cases, exploratory operation.

### Report of Cancer Campaign Committee

Dr. Thomas S. Cullen, Baltimore: Few surgeons have sufficient radium to give it a thorough trial. Extensive doses sometimes cure when smaller amounts have but little effect. Only time will tell what percentage of cases can be cured with radium. At present early surgical procedure affords the best chance for cure. The results obtained from radium must be taken into consideration. At the same time the men who have reported the best results are still urging early operation whenever possible. In the past, attempts to instruct the physicians alone have not produced any decisive results. Hence we must go to the people through the newspapers and magazines. Many popular articles have already appeared. The press has responded nobly to our appeal. As a result the patients are coming earlier. Still there is need of further dissemination of knowledge by means of lectures on hygiene in women's clubs, factories and elsewhere. Further, better records must be kept, hospital statistics must be analyzed carefully so that accurate deductions can be drawn from them, and we must have surgical pathologists to aid in diagnosis. Thorough operations must be insisted on as soon as the diagnosis of cancer is made. Patients who have been operated on must be followed up and the results recorded.

In the years past few cases of cancer of the uterus were cured. Now from 20 to 25 per cent. of patients suffering from cancer of the neck of the uterus who are operated on are permanently relieved. Some of these patients are well thirteen or more years after operation. The results following operations for cancer of the body of the uterus are much more comforting, at least two-thirds being permanently cured. These results are a wonderful improvement on those of twenty or thirty years ago, when nearly all died. When women realize what splendid permanent results may be obtained by early operation, and fully appreciate the necessity of finding out just what is the matter with them, instead of procrastinating until the disease is far advanced, the percentage of permanent cures will be greatly increased.

### Publicity and Ethics

Mr. Samuel Hopkins Adams, New York: The universal agency of popular education is the daily press. Between that great agency of enlightenment and the medical profession there has been raised a barrier fraught with difficulty, the barrier of the unwritten law of the profession, which says to the doctor, "thou shalt not appear in print."

The daily paper, with all its sins, is the one agency by which the medical profession can attain immediate, positive and direct universal education—a saturated solution of enlightenment. Nothing else will do it. There is no sacred reticence required of a doctor other than the reticence that guards the privacy of his patient. The time has come when the old, obsolete ban of silence should be lifted and the propaganda should go on through the agency best fitted to spread it—the daily newspapers.

### Publicity and Education Through the American Society for the Control of Cancer

Dr. Edward Reynolds, Boston: The American Society for the Control of Cancer is composed of prominent members of the profession and of influential members of the laity. It is actively at work in perfecting a wide-spread organization of national scope for the active prosecution of this campaign. It has already been guaranteed, and, indeed, for the most part, has already in cash the large amount of money which is necessary even for initial expense of the organization. It has already under salary a general executive secretary, whose past career is a guarantee of his possession of the necessary power of organization. It plans to work in cooperation with all the existing organizations in the study of cancer and in the promotion of the necessary publicity of all the points on which we already have assured knowledge. It has already been assured of hearty cooperation from the more important of these preexisting bodies, and has received the endorsement of all, or nearly all, of the great national medical associations. It asks the sympathy and effective aid of every member of the profession and of every interested layman and laywoman.

### Education and Publicity Through the Council on Health and Public Instruction of the American Medical Association

Dr. Frederick R. Green, Chicago: What can the Council on Health and Public Instruction of the American Medical Association do to enlighten the public on the prevention and control of disease? The answer is obvious. We can place at the disposal of the American Society for the Control of Cancer and the Committee of the Clinical Congress of Surgeons of North America all of the resources of the council. Through the *Press Bulletin* suitable material on this subject can be placed in the hands of five thousand editors, without any cost to the society or to the committee. Through the speakers' bureau addresses can be given to the public on cancer and its menace. Through the bureau of literature, local pamphlets and leaflets on this subject can be distributed.

The work which needs to be done seems also to be threefold and to be peculiarly adapted to the three organizations mentioned. The first thing is to interest the public, especially the wealthy and influential public, in the problem of the control of cancer. This is a movement for the public welfare, and there is no reason why the public should not assume part of the expense. This is the work for which the recently organized society for the control of cancer is admirably adapted.

The second necessity is the careful investigation of the entire problem of cancer, its age, its race and sex incidence, its relative frequency in different occupations and locations and all of the clinical facts connected with its appearance. This is clearly a clinical and surgical problem.

The third requirement is the distribution to the public of the results of such an investigation. This is obviously a task for the Council on Health and Public Instruction of the American Medical Association, representing as it does the organized profession of the entire country. Through its machinery it can, without any additional expense, place before the public any information which may be desired on this question.

### Educational Value of Cancer Statistics to Insurance Companies, the Public and the Medical Profession

Mr. Frederick L. Hoffman, Newark, N. J.: For the year 1910 the average age at death from cancer and other malignant tumors combined was 59.2 years for the registration area of the United States. For males the average age at death was 60.4 years, and for females, 58.4 years. Considered by organs or parts affected, the average age at death in cancer of the buccal cavity was 63.1 years; in cancer of the stomach and liver, 61.2 years; in cancer of the peritoneum, intestines and rectum, 59.2 years; in cancer of the female generative organs, 53.8 years; in cancer of the breast, 58.3 years; in cancer of the skin, 68 years, and in cancer of other organs and parts not specified, 56 9 years.

Of the mortality from all causes in the registration area, ages 45 and over, the proportion of deaths from cancer is 8.6 per cent., or, respectively, 6.4 per cent. for males and 11.2 for females. During the decade ending with 1911 the cancer death-rate for all ages has increased from 65.8 per hundred thousand of population in 1901 to 83.9 in 1911. The cancer death-rate of males has increased from 48.7 to 64.2 per hundred thousand of population, or 31.8 per cent., and the cancer death-rate of females has increased from 83 to 104, or 25 3 per cent. Considered by divisional periods of life, the death-rates have increased at all ages and for both sexes, with unimportant exceptions, from ages 5 to 14, *inclusive*. For males the increase in cancer during the ten-year period, from ages 45 to 54, was 21 per cent.; from ages 55 to 64 it was 39 per cent.; from ages 65 to 74 it was 40 per cent., and at ages 75 and over it was also 40 per cent. For females the increase in the cancer death-rate from ages 45 to 54 was 11 per cent.; from ages 55 to 64 it was 27 per cent.; from ages 65 to 74 it was 32 per cent., and at ages 75 and over it was 44 per cent.

There is sufficient evidence to sustain the conclusion that in quite a number of cases of suicide the underlying motive was the insufferable torture of a hopeless case of cancer. The recorded cancer death-rate is perceptibly diminished on this account. The mortality from cancer has gradually and persistently increased from a comparatively low rate of frequency to proportions which may appropriately be considered a menace to civilization.

Dr. Ernst Schwarzkopf, of the Surgical Clinic of Prague, found that out of 350 cases of cancer of the breast, 321 were operable and only 39 were not operable. Practically all of the early cases which came to him, say of less than six months' duration, were within the operative group. I have made a special analysis of the experience of the General Memorial Hospital of New York with the following results:

This hospital, during the period 1902-1911, treated 1,337 patients on account of malignant disease. Of this number, 531 were males and 806 were females. Of the total number treated, 460, or 34.4 per cent., were cured; the number of improved was 391. or 29.2 per cent.; the number of not improved cases was 266, or 19.9 per cent.; and 115 patients, or 8.6 per cent., were either not treated or remained in the hospital at the end of the period. There were 105 deaths, equivalent to a fatality-rate of 7.9 per cent.

There are the strongest possible reasons for believing, however, that if the cancer facts, including medical and surgical experience, were brought together in an authoritative form, they would materially aid not only the work of the American Society for the Control of Cancer, but also the various cancer research funds, as well as the individual practitioner in his relations to the patients and the public at large. With this end in view, however, it is necessary that there should be intelligent and active cooperation between the laity and the profession, on the one hand, and the life-insurance companies and the federal and state governments, on the other.

### Outcome of Cases of Cancer Recorded in the Johns Hopkins Hospital

**Dr. Joseph C. Bloodgood**, Baltimore: In eighty-five cases of benign lesions of the lip there were 100 per cent. cures. In lesions of the lip which to the sight and touch seemed benign, but which under the microscope proved to be early cancer, there were nine cures, or 90 per cent. The failure to cure in the one case was due to an incomplete operation on the lower lip. When the lower lip only was removed and not the glands, we have cured but seven patients, or 63 per cent. The failure to cure in four cases was due to the involvement of the glands under the jaw. When the complete operation was performed, there have been twenty five-year cures, or 95 per cent. If the lesion of the lip has had previous treatment and has recurred on the lip, the probability of a cure is reduced from 63 to 20 per cent., from 95 to 60 per cent., and from 50 to 20 per cent. The operation for recurrent cancer of the lip reduces the probability of a cure at least 42 per cent. Similar figures can be duplicated with lesions of the tongue, face, skin of the body and extremities.

In the least malignant forms of cancer of the breast, thirty-five patients were cured five years or more after operation. Fifteen patients came for treatment so early in the disease that a diagnosis of cancer could not be made out until at the operation when the lump was explored. Every one of these patients has remained well five years or more; that is, 100 per cent. of cures have been accomplished when the operation has been in the early stage in the less malignant forms of cancer of the breast. In this form of cancer twenty patients came for treatment late. The same complete operation was performed, but the percentage of cures was but 64 per cent. Results, therefore, in the less malignant form of cancer of the breast were: thirty-five cases, 76 per cent. of cures; fifteen early cases, 100 per cent. of cures; of twenty late cases, 64 per cent. of cures. The percentage of cures for all cases of cancer in which complete operation could be done, and in which the period of time since operation is five years, is now 42 per cent. Five years ago it was only 35 per cent.

In cancer control and precancerous lesions the great hope for increasing the number of cures of cancer and decreasing the number of deaths from cancer lies in the education of the public and the profession as to the significance and potential danger of the precancerous lesion; the education of the surgeon as to the best surgery, and the education of the surgeon and the pathologist as to the recognition of the earliest stage of the beginning of cancer in the benign precancerous lesion. Incomplete treatment in the earlier stage of cancer often yields a worse result than complete treatment in a later stage.

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## COLLEGE OF PHYSICIANS OF PHILADELPHIA

*Meeting held Nov. 5, 1913*

The President, Dr. James C. Wilson, in the Chair

### Results of the Treatment of Poliomyelitis by Operative Measures

**Dr. G. G. Davis**: As we become better informed as to what can be achieved by operative procedures in these cases they will be earlier resorted to than at present. A boy of 13 had been paralyzed at the age of 1. The parts involved were the lower part of the trunk and left lower extremity, the back, the region of the hip and almost all of the muscles of the thigh, with the exception of the biceps and one or two of the muscles moving the foot. As he grew older a knock-knee developed. He wore braces for seven years. The first operation was an osteotomy of the femur, done in December, 1910. In the following March an arthrodesis was done to fix the flail-foot. The biceps femoris tendon was loosened from its attachment on the fibula and inserted into the top of the patella; and while the foot was strongly inverted the fascia lata was slit in a longitudinal direction and sewed fast with silk sutures behind the greater trochanter. The boy wore a brace until the various operative procedures had well healed. His walking has improved ever since. The fixation of the ankle eliminated movement at that joint and also to a considerable extent at the joint between the astragalus and os calcis. The mediotarsal joint, in front of the ankle, not being interfered with, allowed the anterior part of the foot to drop somewhat, but not enough to allow the toes to catch in walking. The lateral movement of the foot was also eliminated to a sufficient extent to remedy the tendency to valgus. The transplanted biceps muscle can be seen to contract perfectly, and holds the knee back in walking so that it does not tend to collapse when weight is put on it. The holding of the thigh in a position of internal rotation by fastening the fascia lata to the posterior edge of the greater trochanter corrected the outward turning of the foot in walking.

DISCUSSION

**Dr. J. Torrance Rugh**: In Italy I saw Putti do an operation which to my mind takes the place of arthrodesis for the ankle-joint, especially in cases of this type. He separates the anterior tendons from the muscles high up on the leg. Then a hole is drilled through the tibia and the tendon ends are drawn through this hole and fastened subperitoneally in front of the tibia, some of the tendons being passed through from one side and others from the other side. He thus shortens the tendons and leaves purely tendinous structure between attachment and insertion, and the tendon acts as a ligament and will not stretch. It is the badly degenerated muscle-tissue which stretches. If there is sufficient contractive power on the part of the posterior tendons, the anterior ones can be shortened and the foot maintained in the proper position, or if there are live muscles anteriorly, the posterior tendons are shortened in the same manner and the necessity of an arthrodesis is avoided. Operative measures, of course, should not be undertaken until it is certain that complete, or all possible, regeneration has taken place, and that there is no possibility of return of power in the muscles. Not until about six years after the onset of the paralysis should operative measures be instituted.

### Diet in Psoriasis

**Dr. Jay F. Schamberg**: A careful study was made of the protein metabolism of eight psoriasis patients. On a given protein diet a psoriatic subject eliminates less nitrogen in the urine than does a normal person on a corresponding diet. Patients suffering from psoriasis exhibit a remarkable retention of nitrogen. This retention appears to be proportional, in a general way, to the extent and severity of the eruption. The nitrogen is retained to a greater degree than in any other condition, and on a diet low in nitrogen and insufficient in caloric value, one on which a normal person would fail to maintain equilibrium. Experiments with urea feedings show conclusively that the nitrogen retention cannot be attributed to any disturbance in the eliminative capacity of the kidneys. Patients with extensive psoriasis may lose very large amounts of nitrogen in the exfoliated scales, which consist of almost pure protein.

The retention of nitrogen in most cases is greater than can be accounted for by the protein lost in the scales, and it may persist even after scaling has ceased and the eruption has virtually disappeared. A low nitrogen diet has a most favorable influence on the eruption of psoriasis, particularly when the latter is extensive. A high-nitrogen diet exhibits an unfavorable influence on psoriasis, commonly causing an extension of the eruption. The great proliferation and exfoliation of cells by the skin in psoriasis demand a large supply of protein, which can be procured only from the lymph- and blood-streams. This protein supply may be derived from the ingested food, and a possibility exists that the great demand of the diseased skin for protein may also be satisfied by the protein reserve in muscle tissue, which thus may become depleted and later require restoration. A protracted low-protein diet may diminish the proliferative activity of the skin by diminishing the supply of protein, the principal building material. On the other hand, a high-protein diet may stimulate the proliferative activity of the cells by furnishing an abundant supply of the necessary protein.

# Current Medical Literature

## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

*November, LXVIII, No. 431, pp. 817-1016*

1 *Treatment of Puerperal Streptococcemia with Intravenous Injections of Magnesium Sulphate. J. A. Harrar, New York.
2 *Lactation Atrophy of Uterus. D. H. Stewart, New York.
3 *Rupture of Symphysis Pubis in Labor. H. E. Tuley, Louisville, Ky.
4 Intermittent and Unilateral Chyluria; Myomectomy at Eighth Week, Pregnancy not Interrupted: Gastrectasis Following Ventral Fixation of Uterus with Long Labor. A. B. Davis, New York.
5 *Conservatism in Operations for Acute Inflammatory Pelvic Disease. B. Van Sweringen, Ft. Wayne, Ind.
6 *Local Anesthesia in Operations for Hernia. J. H. Jacobson, Toledo.
7 *Diagnostic Hysterotomy. G. K. Dickinson, Jersey City, N. J.
8 Laceration of Cervix, Causative Factor in Salpingitis. F. Reder, St. Louis.
9 Report of Cases. A. T. Jones, Providence, R. I.
10 *Use of Iodin in Abdominal Surgery. L. Frank, Louisville, Ky.
11 *Cancer of Uterus and Fibroid Tumors from Clinical Standpoint. E. J. Ill, Newark, N. J.
12 Uterine Fibromyomas of Lower Uterine Segment. J. N. West, New York.
13 *Observations Based on Seventy Cases of Bowel Obstruction. W. C. G. Kirchner, St. Louis.
14 Fibroma of Intestine, Eventuating in Intussusception and Obstruction. H. O. Pantzer, Indianapolis, Ind.
15 Stenosis of Pylorus in Infancy with Report of Cases. J. W. Keefe, Providence, R. I.
16 Fibroma Cardia in Girl of 18; Gastrostomy and Enucleation. J. F. Erdmann, New York.
17 Gall-Stone Surgery with Report of Cases. J. H. Branham, Baltimore.
18 Sudden Severe Hemorrhage into Ovarian Cyst Following Delivery. W. E. Darnall, Atlantic City.
19 *Seven-Pound Ovarian Tumor that Developed in Nine Days. J. H. Carstens, Detroit.
20 Appendicitis in Young Women. H. S. Lott, Winston, N. C.
21 Plastic Method of Closing Ventral Hernia. L. F. Smead, Toledo.
22 *Cholangitis and Pancreatic Lymphangitis. L. W. Swope, Pittsburgh.

1, 2, 3, 5 and 6. Abstracted in THE JOURNAL, October 4, pp. 1320 and 1322.

7. **Diagnostic Hysterotomy.**—When hysterotomy is justifiable, Dickinson says, still remains a question. He has grave doubts whether any one can answer this in pathologic terms. Personal pride in making a diagnosis without too much surgery should lead to a proper effort to obtain same through complete history, curettage, and perhaps the added opportunity of a manual examination of the uterus, but if by these means, particularly in chronic cases, one cannot be positive as to the contents of the uterus or of the condition of its substance, then in Dickinson's opinion hysterotomy is not only justiable but necessary.

10. **Iodin in Abdominal Surgery.**—From his work experimentally and from clinical observations with iodin in the preparation of the field for abdominal operations, Frank concludes that though tincture of iodin is effective as a means of sterilizing the skin, it has its disadvantages. Should the intestines come in contact with the iodin, adhesions will undoubtedly take place in the area exposed, due to the action of the iodin as an irritant to the peritoneum; when tincture of iodin is used as a means of preparing the field, the utmost care should be taken to avoid such contact by protecting the field beyond the abdominal incision by means of moist pads securely fixed in place, and under no circumstances should iodin or its tincture be poured into the peritoneal cavity. In the normal peritoneal cavity iodin in alcoholic or aqueous solution is in sufficient quantity distinctly toxic.

11 and 13. Abstracted in THE JOURNAL, October 4, p. 1323.

19. **Ovarian Tumor.**—One morning, Carstens' patient, aged 30, ii-para, noticed that her abdomen was unusually large; she took a cathartic without relief, her abdomen increasing in size day by day. Carstens saw her just nine days after the onset of the trouble. On physical examination he found an intra-abdominal enlargement extending from the symphysis pubis to near the umbilicus. When lying on her back it was rounded, dull on percussion and fluctuating; nothing could be felt through the vagina, except that the uterus was apparently normal. Her temperature was 100.5 F. Carstens decided this woman had developed a simple ovarian tumor which had produced no symptoms, and had filled the pelvic cavity until it had grown so large that one night it popped up above the rim of the pelvis, and the next morning the patient discovered enlargement. While the tumor was being forced out of the pelvic cavity, the pedicle became partly twisted, sufficiently so as to interfere with the return circulation; as a result some of the veins had ruptured, and there was a gradual filling up of the sac with blood, and an increased flow of serum which, evidently, occurred also during this time. By moving around, attending to her usual work, the pedicle in a few days became still more twisted and finally the circulation was entirely cut off. The tumor then became gangrenous, and the sepsis began to develop just when Carstens first saw her. The operation was a simple one, there were a few slight adhesions, but special care was taken when the sac was emptied not to contaminate the peritoneal cavity. The sac contained a dark, grumous fluid, having the odor of decomposition. The sac itself was green in spots, showing the evidence of gangrene. The infection was from the colon bacillus. She made a quick and smooth recovery.

22. Abstracted in THE JOURNAL, October 4, p. 1323.

### American Journal of Public Health, New York

*October, III, No. 10, pp. 977-1122*

23 Limitations of Federal Food Law. C. L. Alsberg, Washington, D. C.
24 Function of State Authorities in Control and Improvement of Food-Supplies. H. E. Barnard, Indianapolis, Ind.
25 Function of Municipal Authorities in Control and Improvement of Food-Supplies. E. J. Lederle, New York.
26 Function of Voluntary Organizations or Agencies in Control and Improvement of Food-Supply. B. B. Burritt, New York.

### Annals of Surgery, Philadelphia

*November, LVIII, No. 5, pp. 577-720*

27 *Traumatic Erb's Paralysis in Adult. A. S. Taylor and L. Casamajor, New York.
28 *Splenic Anemia, with Special Reference to Etiology and Surgical Treatment. J. S. Rodman and D. P. Willard, Philadelphia.
29 Exactness in Diagnosis and Conservatism in Treatment of Renal Calculus. P. M. Pilcher, Brooklyn.
30 Transperitoneal Resection of Diverticulum of Bladder. E. Beer, New York.
31 Report of 105 Cases of Strangulated Hernia. E. G. Alexander, Philadelphia.
32 *Immediate and Late Results of Whitehead Operation for Hemorrhoids. H. B. Stone, Baltimore.
33 *Method for Mechanical Fixation of Transverse Fractures. H. S. Souttar, London.
34 Reduction of Fragments in Fractures of Long Bones at Open Operation. J. C. A. Gerster, New York.
35 Development of Author's Gastro-Enterostomy Clamp. W. Bartlett, St. Louis.
36 Chevalier Jackson Method of Finger Elevation of Hyoid Bone in General Anesthesia. E. J. Patterson, Pittsburgh.

27. **Traumatic Erb's Paralysis.**—The only rational treatment of this condition, the authors point out, consists in prompt exploration with such repair of nerve structures as may be indicated in the individual case. If no macroscopic injury is found, practically nothing but a skin wound has been made. After the few days required for healing, the after-treatment may be started vigorously, and with exact knowledge of the condition to be dealt with. If gross injury is found it can be repaired at once and so cause the least loss of time to the patient, and give the most favorable opportunity to the nerves for complete repair. Operation consists in the resection of the damaged areas of nerve, followed by end-to-end suture of the roots and trunks. In bad cases in which the resection has been so extensive that approximation by suture is impossible, resection of the middle of the clavicle will greatly facilitate the approximation. An extremity that will move, even with the clavicle absent or distorted, is very much to be preferred to one that is paralyzed, but with the clavicle intact. After-treatment consists in the wearing of some fixation apparatus for from six to twelve weeks, which shall keep the neck and shoulder of the damaged side in close approximation to favor firm anatomic and physiologic union of the nerves. With the removal of the fixation apparatus the various forms

of physical therapeutics should be systematically employed. Results are late in appearing and will seldom be perfect.

28. **Splenic Anemia.**—Splenic anemia in the author's opinion is a disease entity characterized by a definite symptomatology and pathologic picture, and the so-called "Banti's disease" is its terminal stage. In all probability the primary cause of splenic anemia is a toxemia, the origin of which is to be sought for outside the spleen itself, possibly in the gastro-intestinal tract, but the exact nature of which is as yet unknown. This toxin probably acts primarily or secondarily on splenic cells, causing an hypertrophy and increased activity. This increased splenic activity is responsible for the anemia probably through a decreased resistance of the red blood-corpuscles. The icteric pigmentation is also due to an increased hemolysis. Although the thrombophlebitis of the splenic and portal veins is a frequent finding clinically, they believe, from their own experimental work and that of others, that it is not an essential factor in the etiology. If the theory of a primary toxin is correct, they suggest that the blood coming from the spleen to the liver should be doubly toxic, in that it contains not only the primary toxin, but that also elaborated by the splenic substance.

The authors believe that it is the action of this doubly toxic blood that causes the endophlebitis of the splenic and portal veins with its consequent thrombosis. In all probability these same toxic factors play the important rôle in the production of liver cirrhosis, although the mechanical factor of congestion of the portal system may be an additional cause. Up to the present time treatment other than surgical has yielded only temporary benefit. Splenectomy in the first and second stages offers the only chance of permanent cure. The mortality is 12.5 per cent. Splenectomy in the third stage will arrest the further development of the disease, but will not cause a retrogression of the liver cirrhosis. In a few isolated cases of early cirrhosis permanent cure has followed removal of the spleen. In the past five years mortality following splenectomy when done in the third stage has been 56.25 per cent. The combination of splenectomy and Talma's operation should be the procedure of choice in this stage.

32. **Whitehead Operation for Hemorrhoids.**—Of 185 cases cited by Stone, 31 have been operated on less than five years, 59 from five to ten years, 58 from ten to fifteen years and 37 from fifteen to twenty-two years. The results were perfect in every respect in 134 cases, a percentage of 72.4. The most frequent complaint was disturbance of the sphincter action. This complaint was variously phrased; "weakness of control of the bowel" or "imperfect control" were common expressions, and in many cases the statement was made by the patient that he experienced inconvenience in this respect only when from medication or indiscretion in die there resulted an attack of diarrhea. There were thirty-seven cases in which the muscular control was more or less impaired, but in only one of these was there actual paralysis of the sphincter. This patient developed hemiplegia five years after his operation, hence, Stone doubts that the Whitehead operation was alone responsible for the paralysis of the sphincter. Of these thirty-seven patients there were eight who complained of itching or moisture following the operation, but in most of them this was a temporary condition. A number of patients had been bothered for five or six months by sensory disturbances. In sixteen the itching and moisture is still complained of by the patient. In many instances the annoyance was said to be "slight." In five cases there is a certain degree of stricture; two of these were examined by Stone. One of them did not know that he had a stricture; in him there was found a narrow wire-like ring of fibrous tissue of wide caliber, which easily admitted the index finger and caused no symptoms.

In fourteen cases a recurrence in some measure had taken place. One of these patients had had a perfect result for nineteen years and then developed a thrombotic external pile. Another had two small skin tags remaining from the operation. A third has a small external pile. Another says that there is still "some bleeding." Four others have what they describe as a "little return" of the piles. One patient, in response to letters, returned to the hospital, was readmitted and operated on for an isolated hemorrhoidal polyp, which had developed since his original operation. In five cases there was more or less extensive recurrence of the hemorrhoids, and of these, three were operated on the second time. On one of the three a third operation was made, each of the operations being performed by a different surgeon and by a different method. This patient states that he still suffers from hemorrhoids.

33. **Fixation of Transverse Fractures.**—The plate used by Souttar is of thin sheet, and instead of lying on the surface of the bone is for the most part buried in its substance. For this purpose a slot is cut longitudinally in the two fragments of the bone with a small circular saw. The plate is 1 cm. or more wide and from 5 to 10 cm. in length. The whole of this portion is intended to be buried in the bone. A narrow flange projects from one edge and is to lie on the surface of the bone. This flange may be provided with holes for screws. In other cases it may be preferred to fix it with wires encircling the bone. In most cases screws will be preferred and a special form of screw is provided. They are of steel with a fine thread, as they are intended to engage only in the compact bone. The point is slightly tapered and this portion of the screw is flattened on one side. A sharp edge is thus left, by means of which the thread actually cuts its way into the dense bone. The screw may thus be driven into the bone with great freedom, and scarcely any resistance is encountered till it is actually home. A solid hold is thus obtained which is impossible with other types. The chief advantage of this method is the great solidity of the fixation.

## Boston Medical and Surgical Journal

*November 20, CLXIX, No. 21, pp. 741-776*

37 *Summer Diarrheas in Children, 1911. A. I. Kendall and A. A. Day, Chicago, and E. P. Bagg, Boston.
38 Saprophytism, Parasitism and Pathogenism. A. I. Kendall, Chicago.
39 *Summer Diarrheas in Children, 1912. A. I. Kendall and A. A. Day, Chicago.
40 Etiology of Severe Summer Diarrheas of Bacterial Causation. A. I Kendall, Chicago.
41 Two Types of Infectious Diarrhea in Infants. R. M. Smith, Boston.
42 Preparation of Common Infant Foods. R. B. Hunt, Boston.
43 The Wetnurse Problem. F. B. Talbot, Boston.
44 Relation of Hospital to Hygiene of Pregnancy. J. L. Huntington, Boston.

37. **Summer Diarrheas in Children.**—The striking fact brought out by the authors is that in every case of infantile diarrhea studied (with the exception of the few fermentative diarrheas) there was a general conformity in bacterial type of the intestinal flora, which was uniformly proteolytic in character. This proteolytic flora forms a striking contrast to that of normal children of similar age, in which the putrefactive activities are minimal. Superimposed on this proteolytic background various of the well-known intestinal pathogens may stand out conspicuously. In the past the isolation of such organisms has sufficed to establish the diagnosis; it now appears that such is not necessarily the case, inasmuch as one or more of them may be present without the production of noteworthy symptoms. On the other hand, cases are met with in which these organisms cannot be found, yet show blood, pus and mucus in the stools and severe toxemia. In these latter cases the flora has been found to be proteolytic in character.

39. **Idem.**—Gas bacilli were found by Kendall and Day in fifty-three of a total of 135 cases of diarrhea during the summer of 1912. This is a much higher incidence than that observed in previous years, although the technic employed for the recognition of this organism was that which has been used throughout these investigations. In 1910, for example, gas bacilli were found in but twenty-two of a total of 293 cases examined. In 1911 thirty-three out of a total of 283 were positive. These statistics emphasize the epidemic tendency which the gas bacillus exhibited in 1912. Even early in the season this unusual frequency of gas-bacillus cases attracted attention, and a study was made of diarrheas of moderate severity due apparently to fat indigestion.

In all, 103 cases of these fat diarrheas were studied with this object in view. Of these, six showed definitely large numbers of gas bacilli. Gas bacilli were found in small numbers in six other cases, apparently, however, without significance. Dysentery bacilli were found in five patients; four of these were of the Flexner type, one of the Shiga type. An organism apparently identical with the Morgan bacillus has been found in thirteen of these. A yeast odor was noticed in a considerable number of cases. The stools when passed were more or less frothy and contained considerable amounts of mucus. A peculiar bacillus, which is tentatively grouped with the pneumobacillus was found repeatedly in thirty-one of these, usually in considerable numbers. Paratyphoid bacilli of the Beta type were found in four cases, bacillus pyocyaneus in two, streptococci in six. Yeasts were isolated from the stools of seven patients. The stools from which these yeasts were obtained did not possess a yeasty odor.

### California State Journal of Medicine, San Francisco

*November, XI, No. 11, pp. 431-474*

45 Value of Pyelography for Diagnosis of Hydronephrosis. M. Krotoszyner, San Francisco.
46 Exophthalmic Goiter: Indications and Contra-Indications to Operations. E. H. Schneider, Los Angeles.
47 Clinical Methods of Estimating Degree of Acidosis in Diabetes. T. Addis, San Francisco.
48 *Early Symptoms of Poliomyelitis with Special Reference to New Preparalytic Symptom. J. A. Colliver, Los Angeles.
49 Effects of Civilization on Eyes. A. S. Green, San Francisco.
50 Partial Bilateral Nephrectomy in Case of Calculous Pyonephrosis. W. E. Stevens, San Francisco.
51 Roentgenoscopy of Gastro-Intestinal Tract. A. Solland, Los Angeles.
52 Affections of Eyes Resulting from Sinus Involvements. R. W Miller, Los Angeles.
53 Ringworm in California. H. Morrow, San Francisco.
54 Case of Ophthalmic Migraine. E. W. Alexander, San Francisco.
55 Four Cases of Removal of Prefrontal Tumor of Brain. L. Newmark, San Francisco.
56 Differential Diagnosis of Palmar Syphilis, Eczema and Psoriasis. D. W. Montgomery and G. D. Culver, San Francisco.
57 Parasitic Skin Disease in California. E. D. Chipman, San Francisco.
58 Thrombosis of Lateral Sinus with Report of Five Cases. C. F. Welty, San Francisco.
59 Three Cases of Pellagra in San Francisco. J. B. Frankenheimer, San Francisco.
60 Ductless Gland Extracts in Relation to Ear Affections. H. Y. McNaught, San Francisco.

48. **Symptoms of Poliomyelitis.**—The symptom referred to by Colliver is a peculiar twitching tremulous or convulsive movement of certain groups of muscles lasting from a very few seconds to less than a minute. The amplitude of vibration is greater than a tremor, not so constant and long as a convulsion, and more regular than mere twitching, yet it has in it some of the elements of all. It usually affects a part or whole of one or more limbs, the face or jaw, but it may sometimes affect the whole body. He says that the symptom may easily be overlooked in the beginning, as it usually lasts less than a second and does not recur, unless the patient is disturbed, oftener than every hour or so. Later the duration of the spells lengthens, first to a few and then several seconds; at the same time the intervals between become shorter. This condition is often accompanied by a peculiar cry similar to the hydrocephalic. At times there is a slight convulsive movement just like a chill, as mothers say, during which time the child is apparently unconscious, with eyes set for a few seconds. and then he apparently becomes normal again. This short unconscious spell with eyes set may occur without noticeable convulsive movements. It acts thus something like a *petit mal.* Colliver has observed it as a twitching of the lips with tongue running in and out and working of jaw, preceding bulbar cases.

### Cleveland Medical Journal

*October, XII, No. 10, pp. 647-722*

61 Social Evil in Relation to Health Problem. J. H. Landis, Cincinnati, O.
62 Kinetic System: Theory. G. W. Crile, Cleveland.
63 Laboratory Studies of Activity of Brain and Adrenals in Response to Specific Stimuli. F. W. Hitchings, H. G. Sloan and J. B. Austin, Cleveland.
64 Treatment of Infantile Paralysis. G. I. Bauman, Cleveland.

### Journal-Lancet, Minneapolis

*November 15, XXXIII, No. 22, pp. 619-652*

65 Notes from Surgical Clinics in Germany, Belgium and Great Britain—1913. W. J. Mayo, Rochester, Minn.
66 Who Should Do Surgery? M. M. Ghent, St. Paul, Minn.
67 Fecal Impaction Complicating Pregnancy. J. Grassick, Grand Forks, N. D.
68 Hypopituitarism, with Report of Case. T. J. Billion, Sioux Falls, S. D.

### Kansas Medical Society Journal, Kansas City

*November, XIII, No. 11, pp. 425-468*

69 Acute Infections of Peritoneum. N. C. Morrow, Altamont.
70 Ulcer of Stomach. R. B. Gibb, Pittsburgh.
71 So-Called Social Evil. P. S. Mitchell, Iola.
72 Trachoma. C. A. Landes, Parsons.
73 Fact versus Mental Impression. W. R. Heylmun, Iola.

### Medical Record, New York

*November 22, LXXXIV, No. 21, pp. 921-966*

74 Indications from Urine in Treatment of Certain Diseases of Skin. L. D. Bulkley, New York.
75 Public Value of Different Milks. C. E. North, New York.
76 Comminuted Fracture of Larynx — Accidental Tracheotomy — Multiple Trauma — Extensive Frostbite — Recovery. D. B. Delavan, New York.
77 Utility of Enzymes in Malaria. F. W. Lamballe, U. S. Army.
78 Fundamental Principles of Biochemistry, Their Application in Study of Colloidal Minerals and Their Resulting Use in Medicine. J. A. Handy, Buffalo.
79 *New Method of Repair for Vaginal Hernia, with Report of 140 Cases in Which It Was Used. H. A. Wade, Brooklyn.
80 Some Objections to Materia Medica Standardization, with Reference to U. S. Pharmacopeia. F. E. Stewart, Philadelphia.
81 Infantile Eczema. B. F. Ochs, New York.

79. **Repair for Vaginal Hernia.**—In Wade's method an incision is made beginning at the lateral mucocutaneous junction of the posterior aspect of the vaginal outlet. The amount of tissue that, without too much tension, may be brought up to the urethra, is estimated, and then the mucocutaneous junction at this point is grasped with a mouse-tooth forceps, and with slight traction a curved incision is made with the convexity directed toward the anus, extending to a point at the same level on the opposite side of the vaginal outlet. A flap of mucous membrane is now dissected upward, and with a clamp held clear of the field of operation. This flap is allowed to remain, and subsequently acts as an umbrella to protect the plastic work done below from the irritating discharges above. By means of the fingers the dissection is continued laterally on either side until a firm fascial layer is made out. Then these layers of fascia, not muscle, are brought together and held with a continuous suture of No. 2 chromic catgut. The superficial fascia is similarly united with the same strand of catgut. The skin is dissected free from the superficial fascia. A clamp is placed at the posterior angle of the skin incision and the wound is securely sealed with from four to seven clips. The clips are removed at the end of six to nine days.

### New Jersey Medical Society Journal, Orange

*November, X, No. 6, pp. 275-328*

82 Nasal Hydrorrhea with Report of Case. H. Vaughan, Morristown.
83 Submucous Resection of Nasal Septum. T. W. Corwin, Newark.
84 Rapid Stomach Diagnosis, with Two Original Methods. S. Lewis, Lakehurst.
85 Postoperative Intestinal Stasis and Intra-Abdominal Use of Oil. W. F. Burrows, New York.
86 Results of Open-Air Treatment in Public Schools of Newark.

### New Mexico Medical Journal, Las Cruces

*November, XI, No. 2, pp. 43-80*

87 Artificial Pneumothorax. A. G. Shortle, Albuquerque.
88 Hodgkin's Disease and Its Relation to Tuberculosis. G. E. Giese, Colorado Springs.
89 Observations on Altitude. F. E. Mera, Santa Fe.
90 Medical Profession in Its Relation to Tuberculosis Problem. J. W. Flinn, Prescott, Ariz.
91 Roentgen Ray in Pulmonary Tuberculosis. J. O. Walkup, Fort Bayard.
92 Specifics. C. L. Hendricks, El Paso, Tex.
93 Feeding of Tubercular Patients. E. C. Prentiss, El Paso, Tex.
94 Marked Hemorrhages from Intestines in Tuberculosis. L. S. Peters and E. S. Bullock, Silver City.

### New York Medical Journal, New York

*November 22, XCVIII, No. 21, pp. 997-1044*

95 Recent Progress in Orthopedic Surgery. C. Ogilvy, New York.
96 Inoculation Therapy. M. J. Synnott, Montclair, N. J.
97 Prejudices and Superstitions Met with in Medical School Inspection. J. Sobel, New York.
98 Quantitative Chemical Reaction for Control of Positive Wassermann Reactions. D. M. Kaplan and J. E. McClelland, New York.
99 *Aurometer. M. Lubman, New York.

100 Test for Adult Imbeciles and Six-Year-Old Normals. H. A. Knox, Ellis Island.
101 Myiasis, or Fly Larvae as Parasites of Man. M. G. Wohl, Philadelphia.
102 Expectant School Diseases. H. B. Wood, Providence, R. I.
103 *New Apparatus for Proctoclysis. W. D. Miningham, Newark, N. J.

99. **Aurometer.**—The aurometer designed by Lubman consists of circular headband adjustable by a thumbscrew to fit any size of head. At the sides of this headband opposite the ears, are extended two angular bars graduated in one-half inches. On each bar is a sliding upright piece controlled by a thumbscrew and with a small hook at the top to suspend a watch; the watch will be in the exact line of the external canal. The headband has two eye shields to obstruct patient's vision, for obvious reasons. It is preferred that the watch should hang on a string from the hook, as it will prevent a solid contact of watch with the instrument to transmit vibrations. It is by moving this sliding upright with the watch that gives accurate data of the progress of the case.

103. **Apparatus for Proctoclysis.**—This apparatus consists of a vacuum bottle with a specially fitted brass stopper containing an outlet tube for the fluid and an inlet tube for air extending to the bottom of the bottle. The dropper consists of a glass barrel having an inlet tube with a stop-cock attached and an outlet tube. The most important part of the dropper is the air vent which not only eliminates any tendency toward a vacuum formation which would inhibit the flow, but also permits of the free expulsion of gases from the rectum without in any way contaminating the fluid in the container.

### Ohio State Medical Journal, Columbus

*November, IX, No. 11, pp. 515-574*

104 Case of Polyuria with Study of Kidney Function. G. A. Fackler, Cincinnati.
105 Management of Industrial Accident Cases with Special Reference to End Results. C. D. Selby, Toledo.
106 *Drainage in Abdominal and Pelvic Surgery. C. L. Bonifield, Cincinnati.
107 Induction of Premature Labor. G. B. Booth, Toledo.

106. **Abdominal and Pelvic Drainage.**—Bonifield uses plain gauze wrapped with a thin layer of iodoform gauze and the large wick thus made is put in a rubber tube long enough to extend from the bottom of the abscess cavity through the abdominal wall. Enough gauze protrudes from the end of the tube to completely fill the abscess cavity. His reasons for using plain gauze wrapped in iodoform gauze are as follows: Iodoform gauze arrests hemorrhage better than plain gauze; it seems to be less irritating to the structures with which it comes in contact; they do not cling to it with the same tenacity, and it remains sweet longer when used in infected areas. This drain is applicable whenever drainage is required in the peritoneal cavity. Its size and length are subject to the widest variations. It is made of materials always to be found in any well-equipped operating-room. It requires little time to properly fashion them and most important of all one drain will in the majority of cases be sufficient to meet all requirements.

Bonifield mentions another method of drainage brought to the attention of the profession by Lawson Tait, but largely forgotten now, namely, free purgation with salts. By such purgation the peritoneum was made to absorb rapidly and take care of a limited amount of infectious fluid without much harm to itself. When other drainage is employed its use is seldom necessary, but when the abdomen has been closed without drainage and there is evidence of a mild infection of the peritoneum, Bonifield says he knows of no more rapid or more sure way of arresting the extension of the inflammatory process than by drainage through the intestinal tract produced by free purgation.

### Pennsylvania Medical Journal, Athens

*October, XVII, No. 1, pp. 1-84*

108 Cohesive Function of Society Secretary. H. C. Macatee, Washington, D. C.
109 Medical Ethics in Relation to Roentgenology. D. R. Bowen, Philadelphia.
110 De[illegible] Malpractice Suits. C. L. Stevens, Athens.
111 Tr[illegible] Stricture by Use of Air-Dilating Urethroscope. G. M. Dorrance, Philadelphia.

### Public Health Journal, Toronto

*November, IV, No. 11, pp. 591-638*

112 Why Are Modern Infectious Diseases Mild. H. W. Hill, London, Ont.
113 Propagation, Cultivation and Distribution of Oysters. T. J. McKey, Toronto.
114 Civil Engineering and Its Relation to Public Health. J. Antonisen, Brandon, Man.
115 Dental Caries in Schoolchildren and Dental Inspection. W. D. Cowan, Regina, Sask.
116 School Grounds and Supervised Playgrounds. G. R. Jackson, Edmonton, Alta.
117 Need for More Complete Organization in Public Health Work. H. G. Pickard, Brandon, Man.

### Surgery, Gynecology and Obstetrics, Chicago

*November, XVII, No. 5, pp. 523-596*

118 *Chronic Ascites. J. R. McDill, Milwaukee, Wis.
119 *Incontinence of Urine, Complete and Incomplete. J. M. Baldy, Philadelphia.
120 Osteitis Fibrosa Cystica. J. F. Percy, Galesburg, Ill.
121 *Acute Hemorrhagic Pancreatitis. G. H. Whipple and E. W. Goodpasture, Baltimore.
122 Benign Polyps of Male Urethra. A. Randall, Philadelphia.
123 *Surgery of Ileocecal Valve. J. H. Kellogg, Battle Creek, Mich.
124 Abdominal Incision in Treatment of Ovarian Cysts. P. B. Bland, Philadelphia.
125 *Irregular Kidney Vessels Found in Fifty Cadavers. R. R. Rupert, Chicago.
126 Hernia of Uterus and Both Adnexae. L. K. P. Farrar, New York.
127 Reaction of Human Organism to Class of Foreign Proteids Represented by Syncytial Cell. C. Foulkrod, Philadelphia.
128 Thrombosis and Embolism following Operation and Childbirth. B. R. Schenck, Detroit.
129 *What Are Best Methods of Educating American Women Concerning Cancer. F. J. Taussig, St. Louis.
130 Pyelitis Follicularis. H. L Kretschmer, Chicago.
131 *Possibilities of Preserving Integrity of Potential Body Cavities by Use of Foreign Body to Prevent Adhesions. F. Prime, New York.
132 Isolated Disease of Scaphoid Bone of Foot in Children (Koehler's Disease). G. E. Pfahler, Philadelphia.
133 *Modification of Webster's Endoperitoneal Shortening of Rour[illegible]tz, Chicago.
134 Eight [illegible] teps of Suprapubic Prostatectomy [illegible]
135 *Dressing and Care of Herniotomy Wounds of Infants and Small Children.* C. G. Buford, Chicago.
136 Value of D'Arsonval Current in Treatment of Benign and Malignant Tumors of Urinary Bladder through Operating Cystoscope. L. T. Ashcraft, Philadelphia.
137 *Method of Controlling Hemorrhage in Thyroidectomy. E. O. Jones, Seattle, Wash.

118. **Chronic Ascites.**—McDill's experiments show that the ends of three strands of No. 20 silk, sewed together, slightly projecting into the lower levels of the peritoneal cavity become a permanent silk-connective tissue peg; that the breach it makes in the abdominal wall allows the escape of fluid, and that the hernia liability is nil. The procedure need not confine the patient to bed for more than one day; is not much more formidable than an ordinary paracentesis abdominis, and can be repeated if necessary at any subsequent tapping until there is sufficient drainage. The permanency of any improvement will depend on the internal treatment.

119. **Incontinence of Urine.**—The points involved in Baldy's operation are: To make permanent pressure on the neck of the bladder and the bladder end of the urethra. This is accomplished by bringing the vaginal mucous membrane and the underlying fibrous tissue from side to side so tensely as to make firmer pressure. This is done by making a denudation of the vaginal mucous membrane and the underlying fibrous tissue at the neck of the bladder; and by bringing the edges of the incision together laterally by interrupted sutures of silkworm gut; and finally, by placing a single reinforcing suture with which to take tension off the suture already placed. The denudation is carried one-half to three-quarters of an inch both fore and aft from the neck of the bladder, in order to insure full pressure at the neck.

The denudation is an oval, the widest point of the oval being as near the exact neck as can be calculated, in order to insure most pressure at that point. The width of the denuded oval is limited only by the possibility of bringing the edges forcibly together with the aid of tenacula. This is important, as it is this which gives the pressure. The denudation is carried into, but not through, the underlying fibrous tissues; resection of this tissue is avoided. The object is to double the fibrous tissue on itself and get a deeper and firmer scar than could be gotten by a resection and bringing the comparatively narrow edges together.

The stitches are of fine catgut, interrupted. The first one is placed directly at the neck, in the cenetr of the oval. They are introduced laterally, are brought out at the bottom of the wound and reintroduced to be carried across and out on the opposite side. Care must be taken, however, not to leave a blind space in the depth of the wound. Too much tension cannot be made on the stitches: the width of the denudation had better be overdone than underdone. The idea is to make it as tense at this point as possible in order to make the utmost pressure. After all sutures have been tied the reinforcing suture is placed. The object of this suture is to draw the tissue from side to side of the vagina over the line of sutures already placed, so as to relieve them from tension until healing has occurred. In placing this suture a point well away from the line of sutures directly at the point of greatest tension is chosen so as to make full allowance for the subsequent cutting of this suture. The needle is introduced in the direction of the long axis of the vagina, so as to get abundance of tissue. A quarter of an inch, longitudinal to the line of suture, can be picked up on both sides of the line of sutures. The suture is carried in depth as far as possible without perforating the bladder mucous membrane. In this way a sufficiently large bunch of tissue is included in the grasp of the suture as to insure against cutting out before healing has fully occurred and the parts have adjusted themselves. The subsequent treatment consists in keeping the sutures as clean and dry as possible, and of the use of the catheter several times a day. The sutures are removed at the usual time for plastic work.

121. **Acute Hemorrhagic Pancreatitis.**—The peritoneal exudate in acute hemorrhagic pancreatitis, according to Whipple and Goodpasture, contains no toxic substances. It is harmless when injected intravenously or intraperitoneally in large amounts into normal dogs or those suffering from acute pancreatitis. The ferments which escape from the injured pancreas are rapidly neutralized, and this peritoneal exudate usually is free from proteolytic ferments and contains the same amount of lipase as does the blood-serum. The hemorrhagic peritoneal exudate may be looked on as having a neutralizing action and appears to benefit rather than injure dogs suffering with acute pancreatitis. Dogs with acute hemorrhagic pancreatitis which are subjected to exploration and removal of peritoneal exudate will appear sicker than control dogs left undisturbed. The pancreas can survive remarkable grades of injury, and this factor of safety should always be considered in drawing deductions from any surgical procedure. Its adaptability of repair seems greatest when the gland is left undisturbed in a closed abdomen.

123. **Surgery of Ileocecal Valve.**—The operation which Kellogg performs for insufficient ileocecal valve action does not differ from the ordinary mode of proceduce in end-to-side anastomosis of the small intestine with the colon except in one important particular—that there is a distance of two to three centimeters, measured along the surface of the intestine, between the inner and the outer suture lines. This permits the inverted small intestine to project into the colon about half an inch. The portion of the ileum thus intussuscepted forms a good valve for the reason that the folds of mucous membrane readily fall together whenever there is the slightest backward pressure. In Kellogg's opinion the so-called stort-circuiting operation or ileosigmoidostomy, or any other operation whereby an anastomosis is made between the ileum and the colon, should never be performed without the construction of a valve for the prevention of reflux from the colon into the ileum. Without an ileocolic valve to prevent reflux, an ileosigmoidostomy performed for the purpose of getting rid of the intestinal intoxication arising from stasis in a looped, kindred or otherwise crippled colon may leave the patient in a condition as bad as, or even worse than, before the operation by practically converting into a colon many feet of his small intestine. The best point for attaching the ileum to the colon, Kellogg states, is near the upper end of the distal leg of the pelvic colon. Great care must be taken to avoid bruising or unnecessary handling of the intestine, so as to prevent adhesions, the formation of which about the point of anastomosis may become a source of obstruction.

125. **Irregular Kidney Vessels in Fifty Cadavers.**—Of the fifty cadavers, thirty-five, or 70 per cent., showed a unilateral or a bilateral anomaly of the renal arteries or the veins, or both.

129. *Abstracted in* The Journal, *May 31, p. 1738.*

131. **Preserving Integrity of Potential Body Cavities.**—In order to ascertain whether celloidin could be used to advantage in situations in which adhesions are most apt to form, the brain, joints and nerves were selected by Prime as the most suitable places to introduce the tissue. Within the cranial cavity there would be no adhesions if a piece of celloidin were placed beneath the dura, but between the celloidin and the dura, and often between the celloidin and the brain, a connective tissue membrane would form which was smooth and glistening and free from fibers binding it to the underlying tissue. The same thing was found along the nerves, and even when, as a mass, the celloidin was found wrapped in the omentum, the same glistening membrane was found, with the celloidin quite free within it.

The explanation of these phenomena seems to be that at the time of operation, when, for example, the dura is opened and manipulated, there is sufficient injury done to this delicate membrane to set up a reaction, and cause an exudate to be thrown out. The celloidin present prevents this from reaching the underlying surface, so that when the connective tissue begins to grow into this exudate, it simply grows along the surface of the celloidin and the dura, thickening the latter.

In cases of nerve suturing, the results were most satisfactory. A nerve in the foreleg which had been cut across and sutured with fine silk, and a celloidin tube slipped over the point of suture, at the end of ten days showed no evidence of the nerve being bound down, but was free in the tube, and at the end of six weeks another which had been wrapped with a piece of celloidin tissue showed a sheath of connective tissue which had formed over the celloidin, leaving the nerve healed and free beneath it. In places such as the joints it can be used to prevent the formation of new adhesions or hinder the reformation of old ones.

133. **Endoperitoneal Shortening of Round Ligaments.**—The modification which Schmitz proposes and has already executed in a few cases is as follows: Attach a Barrett ligature carrier to the ligature applied to the distal end and carry it between the layers of the broad ligament to the posterior surface of the uterus underneath its peritoneal covering. Make a very small performation in the center of the peritoneal covering to enable one to catch the ligature and thus hold the ligament in position. The same procedure is now carried out on the opposite side. The two ligatures are tied, uniting the two ends of the round ligaments. The latter are finally secured to the posterior wall of the uterus by a few interrupted fine chromicized catgut stitches. These should only include a portion of the round ligament, to prevent gangrene of the same. Finally the proximal end of the round ligament is attached to the distal end as in the Alfieri modification, and the peritoneal incisions are closed. The round ligament now has the form of a Y. The advantages claimed for Schmitz's modification are: 1. The ligaments remain entirely extraperitoneal. 2. There is a mucomuscular attachment between the uterine mucosa and the denuded round ligament. 3. The method does not use the strongest portion of the round ligament for the shortening, hence the functional ability of this ligament is as nearly normal as possible.

137. **Method of Controlling Hemorrhage in Thyroidectomy.**—The following are the steps of Jones' procedure: The usual transverse collar incision is made, dividing the skin and platysma. The upper flap is freed to the upper border of the thyroid cartilage. Then at a point opposite the middle of the thyroid cartilage the fascia over the vertical muscles is slit in a longtudinal direction a finger's breadth inside the border of the sternomastoid muscle. This slit is extended upward

and downward for a distance of about two inches. With narrow-bladed retractors the fascia of the sternohyoid and the sternomastoid muscle is drawn outward, the sternohyoid and sternothyroid muscles inward. The finger is pushed down through this space until the pulsation of the carotid are felt. By blunt dissection the fascia just to the median side is penetrated when the finger is felt to be in the loose areolar tissue in front of the longus colli muscle. Retractors with longer blades are then substituted. The sternomastoid and carotid sheath are drawn well outward while the vertical muscles and thyroid gland are displaced inward. The space back of the carotid sheath is in this manner well exposed. The carotid tubercle, which is the important landmark, should now be located. About a finger's breadth below the tubercle, the artery is sought for with two pairs of blunt dissecting forceps. It lies in the loose connective tissue and at the extreme point of its arch seems to be surrounded by a sling of rather firm fascia which binds it to the carotid tubercle. When a short area is freed, a ligature may be passed around with an aneurysm needle. The ligature is tied, the retractors removed, and the parts allowed to fall back to their natural places, and the operation of intracapsular thyroidectomy proceeded with in the usual manner.

### Texas State Journal of Medicine, Fort Worth

*November, IX, No. 7, pp. 205-234*

138 Decomposed Foods. J. S. Abbott, Austin.
139 Prevention of Insanity. J. H. Eastland, Mineral Wells.
140 Management, Care and Treatment of Insane at Southwestern Insane Asylum. F. S. White, San Antanio.
141 Arthroplasty. C. H. Harris, Fort Werth.
142 Median Transverse Fascia Incision. F. C. Floeckinger, Taylor.
143 Whiskey Fiend. W. C. Rountree, Fort Worth.
144 Case of Tetanus Treated with Antitetanic Serum and Chloral. R. C. Brookes, Waelder.

## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### Australasian Medical Gazette, Sydney

*September 27, XXXIV, No. 454, pp. 283-310*

1 National Insurance in Its Literal Sense. A. C. F. Halford.
2 Acute Mania and Its Treatment. J. T. Anderson.

*October 4, No. 455, pp. 311-334*

3 Heredity. A. Saw.
4 Emotions and Their Relation to Mind. G. H. Taylor.

*October 11, No. 456, pp. 335-356*

5 Treatment of Persistent Arterial Hypertension of Middle-Aged and Elderly. R. F. Llewellyn.
6 Spastic Paraplegia Treated by Foerster's Method of Intradural Neurectomy. H. Norrie.

*October 18, No. 457, pp. 357-380*

7 Cases of Pellagra-Like Lesions in Australia. C. A. Hogg.
8 Radicular Neuritis. J. C. Verco.

### British Medical Journal, London

*November 8, II, No. 2758, pp. 1193-1268*

9 Hysteria in Some of Its Aspects. T. R. Glynn.
10 Rational Treatment of Chronic Bacillary Dysentery. L. Rogers.
11 *Gastric Tetany in Adult. W. K. Irwin.
12 *Case of Acute Dilatation of Stomach in Course of Operation for Duodenal Ulcer. W. G. Richardson.
13 Dupuytren's Contraction Successfully Treated by Open Incision and (Thiosinamin) Fibrolysin. A. H. Tubby.
14 Chronic Interstitial Nephritis in Children. H. Barber.
15 Yeast Infection in Children. R. Craik.
16 Salicylic Ionization in Acute Pericarditis. J. S. Mackintosh.
17 Sleep and Treatment of Sleeplessness. G. Savage and W. H. B. Stoddart.
18 *Micrococci in Blood and Cerebrospinal Fluid of Two Cases of Mania. W. Boyd and G. L. Brunton.
19 Present Position of Psycho-Analysis. M. D. Eder.
20 Treatment of Alcoholism by Suggestion. H. E. Wingfield.
21 Case of Extensive Amnesia of Remote Date Cured by Psycho-Analysis and Hypnosis. W. Brown.
22 Vertigo. J. S. R. Russell.
23 Truths about Mental Healing. T. A. Williams.
24 Motor Show from Medical Man's Point of View. H. M. Buist.

11. **Gastric Tetany in Adult.**—Irwin has collected the records of thirty-nine instances of the disease. Of this number 24 were males and 15 females. The average age at which the disease appeared was 42, the youngest patient being 20, and the eldest 66. In the great majority of the cases the symptoms of gastric disease had existed for many years prior to the onset of the nervous affection, and in only three instances out of the entire number for a period of less than twelve months. Out of 19 cases in which an accurate account of the post-mortem examination is recorded, 11 exhibited a dilated stomach, due to the contraction of a chronic ulcer in the pyloric region. In one case the pylorus was greatly contracted from the cicatrization of a chronic ulcer, but there was not much dilatation of the stomach; in two cases the gastric dilatation was dependent on the cicatrization of an ulcer in the first portion of the duodenum. In one case cancer of the pylorus coexisted with chronic ulcer, but in another case a large growth, evidently cancer, was found at the pylorus. In only two cases was the increase in the size of the stomach found to depend on simple atony of its walls. From these facts, Irwin says, it is evident that in the majority of these cases dilatation of the stomach was a long-standing affection, and owed its origin to the presence of a chronic ulcer in the pyloric region. In the majority of the cases the nervous symptoms consisted of a tonic contraction of the muscles of the hands, forearms, feet and legs, but in a few, tetanic contraction of the jaw and body muscles were present. In three cases seizures of an epileptiform nature were present. Out of the 39 cases recorded only 11 recovered. Every drug, from calomel to the latest antiseptic, has been tried. Numerous authorities recommend gastric lavage, but this is a rather dangerous procedure, as passing the stomach tube, even a soft one, very often induces a severe attack of tetany. Others have advised the patient to take a large quantity of water, followed by an emetic, but Irwin could not find any case recorded in which this treatment had been successful. The only treatment up to the present that has given hopeful results is operation, but even this has not always prevented a recurrence of this grave disorder. The patient should have a dose of calomel and then a saline purgative every morning. Fifteen ounces of peptonized milk should be given by the rectum every six hours, and the bowel should be kept well cleansed by giving a saline or soap enema once every twelve or twenty-four hours, and about an hour before the rectal feed. Oral sepsis must be avoided by daily washing the mouth and cleansing the teeth and gums. This will also prevent parotitis, at one time a serious complication. In cases in which rectal feeding has been necessary and food by the mouth has been prohibited, the patient should have a rubber teat to suck. By the above method, Irwin claims the attacks become less frequent and less severe, and tend to disappear usually about the third or fourth day of treatment.

12. **Acute Dilatation of Stomach.**—Richardson saw this patient seven hours after the sudden attack. He says there was no difficulty or doubt about the diagnosis, but three features of the case were noted as unusual: 1. The abdomen had not the extreme board-like rigidity generally present in such cases; indeed, for a case of ruptured ulcer, the abdomen was rather lax. 2. There was abdominal respiration and very little movement of the chest-in contrast to the usual fixity of the abdomen in such cases of recent peritonitis. 3. The pupils were widely dilated. The abdomen was opened and the diagnosis was confirmed, a chronic duodenal ulcer about half an inch from the pylorus with a perforation at its center. There was lymph on all the adjacent peritoneum, the stomach was empty and small. The hole in the duodenum was closed with a catgut purse-string suture reinforced by a row of silk sutures. The operation was simple and easy in every way but one. The only trouble arose from the difficulty in administering the anesthetic satisfactorily. Anesthesia was induced with chloroform (he appeared to be an alcoholic man, and he struggled a good deal), and it was kept up with ether, given by the open method, throughout the operation. Richardson had sewn up about two-thirds of the peritoneal wound when he noticed about two-thirds of the upper part of the abdomen was distending. In less than half a minute the stomach was bulging into the lower part of the wound and the distention increased so rapidly that the suture had to be unlaced. The stomach dilated more and more until it became drum-like and very tense. It appeared to be anchored at the pylorus and the cardiac extremities, because, as the distention increased,

it rolled upward, bringing the greater curvature forward. The veins on the stomach became very prominent and enlarged. Richardson did not see any distention of the duodenum, and the lower part of the abdomen did not increase in size. A stomach tube was passed by the mouth, and immediately there was a rush of gas through the tube, and the distention disappeared. The stomach then became firmly contracted and not greater in diameter than a piece of large intestine. The muscular contraction was extreme and there was no peristaltic wave. It contracted in sections, there being alternating white rings and intervening portions more naturally colored. The venous engorgement of the stomach also disappeared entirely. At the same time the respiration became quiet and wholly thoracic, the complexion became pink, the pupils contracted, and the whole aspect of the patient changed. Less than five minutes elapsed between the beginning of the distention and recovery. The patient did well, and did not differ in his after-progress from other cases of ruptured duodenal ulcer.

18. **Micrococci in Blood and Cerebrospinal Fluid in Two Cases of Mania.**—In two cases of toxic insanity a diplococcus was isolated from the blood and cerebrospinal fluid on more than one occasion by Boyd and Brunton. In the one case the organism was Gram-negative, did not grow on gelatin, produced acid and clot in milk, and acid and gas in glucose; in the other the organism was Gram-positive, grew on gelatin but without liquefaction, produced no change in milk, and acid alone from glucose. A number of similar cases showing leukocytosis and other indications of toxemia were examined bacteriologically, but in every case with a negative result.

### Edinburgh Medical Journal

*November, XI, No. 5, pp. 385-480*

25 Development of Bacteriology and Place It Accupies among Sciences. J. Ritchie.
26 Eczema: Its Prevention and Treatment. W. A. Jamieson.
27 *Perforated Duodenal Ulcer. F. M. Caird, J. M. Cotterill and Others.
28 Operations for Harelip in Out-Patient Department. J. H. Nicoll.
29 Elephantiasis Neuromatosa. N. S. Carmichael.

27. **Perforated Duodenal Ulcer.**—This is a collective report on a series of 200 cases of perforated duodenal ulcer treated in Edinburgh between 1896 and 1912. For details the original article should be consulted.

### Journal of Laryngology, Rhinology and Otology, London

*November, XXVIII, No. 11, pp. 565-620*

30 Direct Examination of Eustachian Tube and Nasopharynx. J. W. Wood.
31 Simple Prothesis after Removal of Great Part of Lower Jaw. J. v. d. H. Leonhard.
32 Primary Intranasal Syphilis. N. Maclay.
33 Brain Abscess of Aural Origin. J. Murphy.

### Journal of Obstetrics and Gynecology of British Empire, London

*September, XXIV, No. 3, pp. 133-196*

34 *Blood-Pressures in Cases of Normal and Abnormal Pregnancies and Labors. M. Donaldson.
35 *Results of Radical Operation for Carcinoma of Cervix Uteri. C. Berkeley and V. Bonney.
36 Intra-Abdominal Pressure in Pregnancy. R. H. Paramore.
37 Retained Placenta due to Implantation in Sacculus or Horn of Uterus. V. B. G. Armytage.
38 Case of Spontaneous Rupture of Uterus at Eighth Month. V. B. G. Armytage.
39 Hysterectomy by Two Suture-Ligatures. R. L. Dickinson. Brooklyn.

34. **Blood-Pressures in Pregnancies and Labors.**—Having examined the blood-pressure in cases of albuminuria complicating pregnancy, Donaldson found that the most striking feature is the high systolic pressure in each case. Further, he noticed that in purely toxic cases the pressure tends to fall quickly to normal after delivery. In the question of treatment, the observations on blood-pressure seem to be of some importance. A rising blood-pressure in spite of treatment is considered by Donaldson to be an indication for terminating the pregnancy. Observations of blood-pressure were made also in a case of pernicious vomiting in which labor had to be induced. In this condition the pressure is not raised, a fact that suggests to Donaldson that the toxin in these cases differs from that of albuminuric cases. The blood-pressure estimated in a case of glycosuria complicating pregnancy showed nothing abnormal.

35. **Operation for Carcinoma of Cervix Uteri.**—The authors' 71 operations were chosen from 112 patients with carcinoma of the cervix presenting themselves for treatment over the period April, 1907, to June, 1910—an operability rate of 63 per cent. These 112 cases represent every patient that came under observation. Sixteen patients died of the operation; 20 died of recurrence; 2 died of intercurrent disease; 2 disappeared; 3 are alive, but with recurrence; 28 are alive and well. Ten patients died of shock, 2 died of paretic ileus, 1 of mechanical ileus, 1 of pelvic suppuration and empyema, 1 of post-operative hemorrhage and 1 of bronchopneumonia. The deaths by shock comprise those who succumbed a few hours after the operation, apparently as the result of its severity and in whom no signs indicative of any other cause of death could be found either clinically or on autopsy. In the cases in which the glands proved to be carcinomatous at the operation the mortality was 29.5 per cent. In 23 cases the disease recurred. Three of these patients are still alive at periods of four years or over from the operation. In only one place did the recurrence take place in the vaginal scar. In the rest the growth has appeared either in the upper part of the pelvis or in the situation of the aortic glands. The recurrence rate, therefore, if reckoned on those surviving the operation (55) works out at 41.8 per cent. These figures rest on a three years' basis.

### Journal of Tropical Medicine and Hygiene, London

*November 1, XVI, No. 21, pp. 81-344*

40 Bronchial Spirochaetosis. A. J. Chalmers and W. R. O'Farrell.
41 Apparent Identity of Agchylostoma Ceylanicum (Looss, 1911), and Agchylostoma Braziliense (Faria, 1910). R. T. Leiper.

### Lancet, London

*November 8, II, No. 4706, pp. 1299-1366*

42 *Heredity and Inheritance as They Concern Physician. C. Mercier.
43 *State of Blood-Vessels in Shock. J. D. Malcolm.
44 Typhoid Carriers. D. S. Davies and I. W. Hall.
45 Diseases due to Deficiencies in Diet. F. G. Hopkins.
46 *Sensitized Virus Vaccination in Gonorrhea, and Especially Its Complications. L. Cruveilhier.
47 *Some Additional Experiences of Nerve Surgery. A. H. Tubby.
48 Public Measures for Prevention of Tuberculosis. N. Raw.
49 Bacteriologic Diagnosis of Case of Plague. W. J. Tulloch.
50 Estimation and Significance of Amino-Acids in Urine in Diabetes Mellitus. P. J. Cammidge.
51 Mortality of Children from Burning. W. A. Brend.

42. **Heredity and Inheritance in Relation to Physician.**—From his observations Mercier summarizes his views as follows: In the first place, if a child is very precocious it is never safe to predict that it will set the Thames on fire. Mercier excludes musical prodigies or calculating prodigies, because music and mathematics, like chess, and linguistics, and certain other faculties, have no relation to general ability. They may be highly developed in the dull, and they may be absent in exceptionally clever men. They go for nothing. In the second place, when a hitherto intelligent child becomes stupid, dull, clumsy and even when it exhibits mental traits that are distinctly abnormal and alarming, we need not be much concerned if we find that it has started into rapid growth; and if the growth is very rapid almost any mental symptom may be witnessed without alarm. In the third place, we need not fear ill results from stimulating the intelligence of a child, even of a precocious child, provided it is healthy in body, eats well, sleeps well, and is not disturbed by dreams, and provided we do not continue the stimulation into the period when bodily growth has started and the development of mind has no backing. The week that the child starts into growth all stimulation of the intellect should cease; and when the growth is rapid intellectual exertion should be restricted and watched with vigilance. Especially if there is in the family any tendency to nervous or mental disorder, children who are growing very rapidly should be withdrawn from school altogether until the period of rapid growth is over. Mercier says that if he had charge of a school he should measure and weigh the children frequently, and should

regulate their intellectual exertion according as growth was active or quiescent. He does not think that intellectual work at high pressure is harmful to either boys or girls as long as food, sleep and bodily exercise are sufficient; but is quite sure that pressure of intellectual work *in those* who are growing rapidly should never be permitted; and if growth is proceeding very rapidly, all intellectual work should be put aside. Another thing which, in his opinion, requires careful regulation is the diet. It is scarcely possible to give growing children too much to eat, and it should always be borne in mind that the carbohydrates—starch, sugar and fat—are mainly fuel that is burnt up in producing muscular movement, and that the proteins are the main elements in the formation of tissue. Consequently, it is a mistake to restrict the meat ration of children.

**43. State of Blood-Vessels in Shock.**—Malcolm is in accord with Henderson, that in cases of fever, of postoperative intestinal obstruction, and of traumatic shock there is a persistent and increasing contraction of the arteries, a conclusion which he believes to be demonstrable at the bedside.

**46. Sensitized Virus Vaccination in Gonorrhea.**—Cruveilhier has not yet come to any final conclusions concerning the various modifications which, in his opinion, ought to be made in Besredka's method of sensitized virus vaccination in order to adapt it to the treatment of gonorrhea. Yet he is able to state that, as has been proved by the experiments of Metchnikoff and Besredka in antityphoid vaccination, it is always preferable to inject living sensitized virus. In a certain number of cases, when Cruveilhier had absolutely failed while persisting in using dead sensitized virus, he obtained excellent results from the use of living sensitized virus. The serum which he employed in his operations was taken from a she-goat to which he had successfully applied Besredka's subintrant injections of the veins in order to render it immune. He considered that it was not advisable to take from the patient himself the gonococci to be sensitized, and he took them from the cultures which he had had in stock for several months. The injections were principally made in the subcutaneous cellular tissue and were repeated at intervals varying according to the different cases. None of the patients showed any sign of severe general reaction. In some cases there was a slight rise of temperature during the hours which followed the injection. Sometimes Cruveilhier also noticed at the site of the injection some erythema accompanied by a pain which never lasted longer than forty-eight hours.

**47. Experiences in Nerve Surgery.**—Brachial plexus lesions, if traumatic, Tubby says, are hopeful, if the loss of power has not existed for years. If due to other causes the outlook is not so good. However, he cautions that we should not despair of a case recovering, even five years after the operation, provided that the improvement has set in within three months after the operation and is continuous. Popliteal neuroplasty for infantile paralysis, he says, has proved disappointing for the reasons given previously. Injuries about the wrist should never be sewn up until the continuity of the nerves has been ascertained, and until all the electrical reactions have been tested. If the lesion of the nerve is compression by a scar the outlook after operation is most hopeful. If the nerve has been severed primary operation is very hopeful, but secondary suture rarely permits a complete recovery. No case, however, of traumatic nerve lesion Tubby would regard as hopeless, in view of the achievements of neuroplasty. Tubby calls attention to a painful condition connected with enlargement of the head of the first metatarsal bone, where there is not only tenderness on the inner side of the joint but also severe pain on its outer side and in the first interdigital space. This is a condition special to those cases in which there is lipping of the joint surfaces and a deposit of osteophytes, and the cause appears to Tubby to be as follows: On dissecting the part there will frequently be found a communicating branch passing from the digital trunk of the anterior tibial nerve to the corresponding nerve on the plantar surface. This communicating branch arises opposite the most prominent part of the head of the bone and passes immediately downward over the capsule of the joint, to which in inflammatory cases it is often adherent, and it joins the digital branch of the internal plantar to the outer side of the great toe. It is easy to see how painful compression may arise, and the remedy Tubby has adopted is simple: i. e, to dissect away the communicating branch and remove the osteophytes.

### Annales de l'Institut Pasteur, Paris

*XXVII, No. 9, pp. 701-796*

52 Piroplasmosis in Dogs in Europe and Africa. A. Laveran and Nattan-Larrier.
53 *Acute Epidemic Poliomyelitis. C. Kling and C. Levaditi. To be continued.
54 Agglutinating and other Properties of Serum of Patients with Trypanosomiasis in French Congo. F. Heckenroth and M. Blanchard.
55 Malaria in Corsica. M. Leger.

**53. Epidemic Poliomyelitis.**—See editorial in The Journal November 22, p. 1904.

### Annales de Médecine et Chirurgie Infantiles, Paris

*November 1, XVII, No. 21, pp. 705-740*

56 Obesity in Children. (Le syndrome adiposo-génital de l'enfant.) G. Mouriquand. Concluded in No. 22. See Paris Letter, Nov. 8, p. 1730.

### Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

*October, II, No. 10, pp. 145-304*

57 Retroplacental Hemorrhage. E. Essen-Möller.
58 Organotherapy in Gynecologic Disease. S. R. Girol.
59 Attempts to Induce Criminal Abortion with Extra-Uterine Pregnancy. A. Turenne.
60 Superheated Air and Steam in Gynecology. R. Dupont.

### Grèce Médicale, Athens, Greece

*XV, Nos. 15-16, pp. 29-32*

61 The Yellow Oxid of Mercury Combines with Sodium Chlorid in the Secretions and Has Caustic Action on the Eye. (Pommades ophthalmiques à base de bioxide jaune de mercure.) P. Apéry.

*Nos. 17-18, pp. 33-36*

62 *Means to Prevent and Cure Hernia of the Brain. (Nouveau procédé de contention de la hernie cérébrale consécutive à un traumatisme ou à une operation.) T. Anastassiades.

**62. Means to Reduce Hernia of the Brain.**—Eleven days after extensive injury of the temporal region from a shell, the wound was the seat of extensive suppuration and the young man was in profound stupor most of the time. There was total amaurosis when he sat up; vision returned when he reclined, but there was no vomiting nor stiffness of the neck. After the wound had been attended to, the brain tissue protruded, the hernia as large as a hen's egg. No means proved effectual in keeping the hernia under control until finally Anastassiades improvised a stopper which answered the purpose admirably. A round of sheet lead was bent over a metal cylinder to make a depression in the center just large enough and deep enough to fit into the gap in the skull. This stopper was boiled and applied between two sheets of gauze. The brain tissue was thus reduced and held firmly in place while several holes bored in the lead cap permitted ample drainage. As the lesion healed, smaller and smaller caps were used. In two other battle-field cases this lead device proved equally serviceable; these patients also promptly recovered.

### Journal de Médecine de Bordeaux

*October 26, LXXXIV, No. 43, pp. 687-700*

63 Prophylaxis in Obstetrics. P. Balard.

*November 2, No. 44, pp. 701-716*

64 Abnormal Respiration Rhythm. (Les altérations du rythme respiratoire.) P. Mauriac.

### Lyon Médical, Lyons

*October 26, XLV, No. 43, pp. 653-708*

65 Fracture of the Wrist. (Fracture du scaphoïde du carpe avec luxation de son fragment supérieur et du semi-lunaire en avant et en dedans.) Jaboulay.

*November 2, No. 44, pp. 709-748*

66 Gall-Stones in Common Bile Duct. (La lithiase du cholédoque.) E. Villard and E. Perrin. Commenced in No. 42.

### Presse Médicale, Paris

*October 25, XXI, No. 87, pp. 865-876*

67 Latent Spina Bifida. A. Broca.
68 Concentrated Solutions of Neosalvarsan in Syphilis. (Suppression du rôle nocif de l'eau.) P. Ravaut.

*October 29, No. 88. pp. 877-884*

69 Spondylosis and Spondylitis. J. Crespin.

*November 1, No. 89, pp. 885-896*

70 Action of Sodium Chlorid on Renal Secretion. H. Roger.
71 Polyneuritis and Edema in Native African Troops. L. Jullien.

### Revue Pratique d'Obstétrique et de Gynécologie, Paris

*October, XXI, No. 10, pp. 289-310*

72 Cesarean Section for Contracted Pelvis. L. Poulot.
73 *Puerperal Phlebitis. G. Keim.
74 Ruptured Extra-Uterine Pregnancy. G. Potherat.

73. **Puerperal Phlebitis.**—Keim has long affirmed that puerperal phlebitis may occur without infection, merely from the combined effects of the impeded circulation from the pregnant uterus and of intestinal auto-intoxication. The functioning of the intestines is hampered as well as that of the vessels by compression from the enlarged uterus, and the liver suffers also, directly or indirectly. One of the principal functions of the liver, its anticoagulation action, may be seriously impaired, and this invites thrombosis, that is, coagulation and accumulation of sediment at points where the blood-stream is most sluggish or where there are eddies and back currents.

Phlebitis and phlegmasia of purely toxic and mechanical origin simulate infectious affections of the kind, but they relieve the obstetrician and the nurse of direct responsibility for them and are generally inclined to be benign. Much can be done in prophylaxis. The intestines and the liver must be supervised with special care during the pregnancy and the uterus should be completely evacuated after delivery. Equally important are measures to reduce the tendency of the blood to abnormally early and excessive coagulation. He has been gratified with the results of organ therapy for this purpose, giving in an enema 100 gm. of fresh calf liver in emulsion in 250 gm. of water, to which 10 gm. of peptone have been added. This aims to induce an anticoagulation action from the calf liver to supplement the insufficient action in this line of the patient's liver. He regards this as a specific organ therapy, and has never had phlebitis develop in the cases in which the method has been applied and has witnessed the prompt relief of symptoms in cases of already developed phlebitis. Sobre-Casas has also reported equally favorable experiences with this form of opotherapy in puerperal phlebitis. Other means to combat the tendency to excessive coagulation may be useful likewise. During the pregnancy Keim insists on treatment of any intestinal trouble and constipation, especially if there has ever been a case of phlebitis in the family or the patient feels pain in the side, or has ever had signs of liver trouble. He warns that intra-uterine injection of any fluid is liable to induce an actual aseptic metrophlebitis.

### Semaine Médicale, Paris

*October 29, XXXIII, No. 44, pp. 517-528*

75 Gas Cysts in the Intestines. (La pneumatose kystique de l'intestin.) F. Lejars.

### Archiv für klinische Chirurgie, Berlin

*CII, No. 3, pp. 563-860. Last indexed Nov. 8, p. 1754*

76 *Cancer of the Large Intestine, Rectum Excepted. (Die chirurgische Behandlung der malignen Dickdarmgeschwülste.) W. Körte.
77 *Cancer of the Colon. J. Rotter.
78 *[illegible] nberg.
79 * [illegible] Schanz.
80 [illegible] Glass Stomach. (Die Curvatur- [illegible] K. Büdinger.
81 Resection of the Knee in Children. H. Alapy.

76. **Cancer of the Large Intestine Outside of the Rectum.**—Körte devotes nearly ninety pages to analysis of the 254 cases of cancer of the cecum and colon which he has encountered since 1890. The radical operation in eighty-three cases gave a mortality of 62.5 per cent. when the cancer was in the transverse colon and of 45.4 per cent. when located in the descending colon, but the mortality was only 26.4 per cent. when the cancer was at the sigmoid flexure, and only 16.6 per cent. in the thirty cases of cancer in the cecum or ascending colon. He tabulates these experiences in seventeen tables, comparing them with reports from other clinics. The average mortality in all is practically the same, about 30 per cent. The special dangers of cancer in the large intestine are due to the peculiar anatomic conditions and the difficulty of taking care of the contents. He reiterates that with acute obstruction the intestine should be opened in the simplest manner and the growth not removed until later. With chronic stasis and when the nourishment of the stump is defective, it is wiser to operate at more than one sitting. But when the bowel can be thoroughly evacuated and the blood-supply is adequate and the stumps can be united without traction, the resection and suture can be done in one sitting. The prospects for a permanent cure are comparatively favorable with cancer of the large intestine; he has 27.7 per cent. surviving for more than three years in his eighty-three operative cases. In the majority of the permanent cures the cancer was in the sigmoid flexure or ascending colon or cecum. He cites the reports from fifteen clinics, showing 38.3 per cent. surviving over three years, among 434 patients treated by resection; in some the interval since has been up to eighteen years.

77. **Cancer of the Colon.**—Rotter compares his experience in 160 cases with Körte's and gives the details of forty-nine. He classifies the cases according as there was ileus or not. The mortality with ileus is from 70 to 79 per cent., while without it the mortality was only 20 per cent. He emphasizes the advantages of ileotransversostomy for tumors in the right colon; he has had no mortality with this during the last four years, and no mortality at any time from ileosigmoidostomy in the six cases in which conditions called for this technic.

78. **Intracranial Extravasation of Blood.**—Nunberg emphasizes the importance of suspecting rupture of the middle meningeal artery in every case of trauma of the skull, and reports eight cases from the Freiburg clinic which show that an epidural hematoma may develop and even prove fatal from compression of the brain without inducing the typical symptoms. In place of the typical symptoms of pressure on the brain there may be merely vague manifestations which must be regarded as equivalents for the classical symptoms. In some of his own cases the motor restlessness of the patients was striking; this symptom has been noticed by others, and he urges its importance as a sign of injury of the meningeal artery in dubious cases. Other warning signs are transient changes in the pulse-rate, the pulse growing slightly slower or irregular at times. Another important sign that must be sought for is contralateral disturbance of the oculomotor muscles when there is a bruise in the parietal region. An operation to relieve the pressure on the brain should not be deferred to wait for all the signs of pressure on the brain to develop; puncture or exploratory trephining should be considered whenever there are grave manifestations. He adds in conclusion that the puncture or exploratory trephining should be done freely and extensively; a hospital environment is not necessary. In only one of the eight cases he reports was the classic picture presented, and consequently no attempt at operation was made, and seven of the eight patients died. In the other case, which may be regarded as a spontaneous cure, Korsakoff's psychosis developed later. In only one of the cases was the pulse typical of pressure on the brain; in two patients not one of the classical symptoms could be detected.

79. **Scoliosis.**—Schanz's article fills nearly a hundred pages and is accompanied by numerous illustrations; it was read at the recent international congress at London. He says that recovery from ordinary benign scoliosis is the rule under any treatment, without any treatment, or in spite of any treatment, and rachitic scoliosis is also under our control if the patient comes into our hands early enough so that the rachitis can be cured in time. But constitutional scoliosis is another matter. We may succeed in arresting the deforming process but we cannot guarantee that this cure will persist, as the scoliosis is the result of unknown processes inside the body. He thinks we have accomplished in the treatment of scoliosis about all that is possible, and for further progress we must look to pathology. The cause of constitutional scoliosis must be some morbid process severely injuring the bone tissue of the vertebrae and thus reducing their weight-bearing capacity. Of what nature is this process? To call it tardy rachitis does

not answer this question, for the clinical course and the clinical findings of constitutional scoliosis are very different from those of true rachitic scoliosis. As long as we class together habitual scoliosis, the congenital, the static, the paralytic and scoliotic sciatica, we may expect confusion—if you eat chocolate and cheese off the same plate, he remarks, *you will never* know exactly how each tastes.

He is convinced that the school does not bring on scoliosis but rather tends to prevent it by reducing the demands on the spine for certain hours of the day. Vertical handwriting, special desk-seats, reform in dress, and special gymnastic exercises do not banish scoliosis from the schools. We find as many cases of curvature of the spine in schools where all this is done as in those in which nothing of the kind is attempted. In treatment, the indications in the individual cases presented by the developing and the already developed deformity form the most important and most responsible elements for treatment and the most interesting, as each case must be strictly individualized as he shows by illustrated descriptions of the course of a number of cases. He warns that gymnastic exercises are liable to do harm in some cases, and that the benefit apparently realized is a deceptive correction. The courses of special gymnastics for curvature of the spine should be restricted to comparatively strong children and to cases in which the weight-bearing balance has not been too seriously upset.

### Berliner klinische Wochenschrift

*October 27, L, No. 43, pp. 1977-2024*

82 *Chronic Otitis Media. (Chronische Mittelohreiterung.) D. Schwabach.
83 *Benzol in Local Treatment of Cancer. G. Kiralyfi.
84 Retropharyngeal Tuberculous Lymph-Node. E. Heymann.
85 The Shock with Various Methods of Anesthesia. (Vergleich der unmittelbaren und Nach-Wirkungen der Spinal- und Lokalanästhesie mit denen der Inhalationsanästhesie hinsichtlich des Shocks und psychischen Shocks.) Y. Henderson (New Haven).
86 Present Status of Treatment of Cancer. (Behandlung der bösartigen Geschwülste.) F. Blumenthal. Commenced in No. 42.

**82. Chronic Otitis Media.**—Schwabach describes in general the pathology and treatment of chronic disease of the middle ear. He says that even when it is possible to cure the old otorrhea and heal up the perforated membrane, yet generally the hearing is left permanently impaired. More frequent are the cases in which the suppuration seems to be cured but the perforation in the membrane does not close and thus it provides an opening for entrance of infection, bringing back the old trouble. He agrees with Wilde that so long as there is discharge from the ear we can never say how, when and where it will end nor to what it may lead. He gives directions for cleaning out the secretion, and says that Bezold's method frequently cures the old affection and in the simplest way. It aims to cleanse the secreting surface from all sepsis germs and exclude it from new influx of germs from the air. He accomplishes this by injecting a boric-acid solution until the outer passages and tympanum are cleansed. Then after thorough drying with the air douche, he insufflates finely pulverized boric acid and pours more into the outer passages which he then plugs with medicated cotton. This procedure is repeated as often as the cotton is moistened with secretion. Schwabach says that since he has been using this method he has had no need for local astringents, but he warns that it should be done by the physician and never given over to the patient. This method fails of course when there are other complications and he discusses the means to meet these.

**83. Benzol in Cancer.**—Kiralyfi reports two cases of inoperable recurring mammary cancer in a man and a woman, in which he applied benzol, suggested by its action in leukemia. In both cases the cancer tissue was destroyed by the direct contact with the benzol, but the cancer tissue beyond continued its course unmodified. Benzol has evidently a remarkable influence on the cancer cells, but this is merely a local action; there can be no question of a curative influence on the cancer from the benzol. He says that this applies also and in the same way to Roentgen therapy, thorium or any other nonsurgical means of treatment.

### Centralblatt für die Grenzgebiete der Med. und Chir., Jena

*XVII, Nos. 4-5, pp. 297-602. Last indexed Oct. 11, p. 1412*

87 *Tuberculosis of the Prostate. F. A. Hesse.

**87. Tuberculosis of the Prostate.**—Hesse's analytic and critical study of the literature on this subject fills this entire number of the *Centralblatt.* He classifies the literature alphabetically by the authors—a total of 1,201 titles. The testimony all points to the superiority of operative treatment, radical removal of the focus into sound tissue. Concomitant pulmonary tuberculosis often becomes materially improved when the focus in the prostate has been done away with. Conservative measures may relieve and improve the prostate lesion, but only in the rarest instances is a cure realized without an operation.

### Correspondenz-Blatt für Schweizer Aerzte, Basel

*October 25, XLIII, No. 43, pp. 1345-1376*

88 Mountain Climate from the Therapeutic Standpoint. (Indikationen und Kontraindikationen des Hochgebirges im Allgemeinen.) C. Stäubli.

*November 1, No. 44, pp. 1377-1408*

89 The Morally Defective. (Wesen und Behandlung der moralisch Schwachsinnigen.) K. Gehry.

### Deutsche medizinische Wochenschrift, Berlin

*October 30, XXXIX, No. 44, pp. 2129-2176*

90 *Changes in Our Estimation and Use of Lavage of the Stomach. (Ueber Wandlungen in der Lehre von den Magenausspülungen.) I. Boas.
91 *Etiology of Variola and Vaccinia. E. Paschen. (Ueber Aufschliessung, Isolierung und Einengung von reinem vakzinalen Virus—Paschen's Körperchen—aus tierischen Schutzblattern—Kuhpocken—auf mechanischem Wege.) G. Paul.
92 *Abderhalden's Serodiagnosis of Mental Diseases. (Weitere Untersuchungen mit dem Abderhaldenschen Dialysierverfahren an Geisteskranken.) J. Fischer.
93 *Action of Light on the Animal Organism. L. Pincussohn.
94 Roentgen Diagnosis of Syphilis of the Aorta. F. Eisler and S. Kreuzfuchs.

**90. Lavage of the Stomach.**—Boas comments on the way in which experience has shown the advisability of restricting the use of the stomach-tube in treatment of chronic stomach affections to a preliminary clearing out of the organ, to start the course of dieting. Repeated lavage of the stomach is not required afterward with mild degrees of stenosis. Once cleared out, there is no further use for the stomach-tube and it merely torments the patient. The stomach will take care of fluid food for a week, and then soft foods can be added, gradually increasing the diet until the tolerance limit is reached, the so-called microretention. This should then be the standard diet, and be kept up for weeks. The case is different with advanced uncontrollable stenosis, but repeated lavage is not necessary even here as the surgeon should be called in without delay. If the patient refuses an operation, the diet should be regulated so that lavage will not deprive the organism of too much nourishment. A combination of purgatives with antiseptic rinsing out of the stomach may be useful, but he never gives the antiseptic until after the stomach has been thoroughly rinsed out. He has found magnesium salicylate the best for the purpose (from what can be taken up on the tip of a knife to a teaspoonful, three times a day). With chronic stagnation from benign and malignant stenosis of the pylorus, simple expression of the stomach content without pouring in a fluid has proved as effectual as lavage in ten years of experience with this measure. The difference between the effect realized is immaterial; patients who have tried both lavage and dry expression always prefer the latter. The technic is simple and easy, the patients requiring no help from without as they readily learn to swallow the tube. He adds that a large number of ingenious apparatus have been invented for autolavage, and illustrated descriptions are given of them in the text-books, but no one seems to use them.

He does not think that it is mere chance that he has had no cases of tetany in the last ten or fifteen years since he has restricted the use of lavage to the above indications. Even with chronic gastritis, the tendency to catarrh is not affected by lavages; this can be controlled far better by suitable diet, mineral waters and avoidance of irritants Benefit from lavage in nervous affections of the stomach is probably the effect of suggestion alone.

91. **Parasites of Variola and Vaccinia.**—Paschen and Paul describe their latest research on the minute bodies which Paschen regards as the causal agent of variola and vaccinia. Paul gives an illustrated description of his apparatus for demonstrating ultramicroscopic forms of virus.

92. **Serodiagnosis of Mental Diseases.**—Fischer reports a further series of eighty-seven patients with dementia praecox, general paresis or epilepsy, tested by the Abderhalden technic for protective ferments. The results confirmed in every case the specific nature of the ferments elaborated in these affections. In the paresis cases, the serum digested cortex tissue but never genital-gland tissue. In the sixteen epileptics, cortex tissue was digested in only one case. In the dementia praecox cases, cortex tissue was digested in the majority of cases, and thyroid tissue in ten of thirty-seven examined, and sexual-gland tissue in fifty-six of fifty-seven examinations. In fifteen cases, both testicle and ovary tissue was tested, with the result that the serum of men digested only testicle tissue, female serum only ovary tissue, and never testicle tissue. Fischer has applied the Abderhalden technic 700 times.

93. **Action of Light on the Human Organism.**—Pincussohn has continued his previously reported research on the action of light after sensitization with eosin or other fluorescent stains. He experimented with dogs, cats, guinea-pigs and rabbits, the results confirming the intensification of the action of light on tissues and organs by this means. It opens a prospect of being able to apply light in therapeutics with more accurate doses and aims than has hitherto been possible, thus magnifying the therapeutic effect of ordinary and artificial light.

### Medizinische Klinik, Berlin

*October 26, IX, No. 43, pp. 1751-1792 and Supplement*

95 Pseudoneuralgia. M. Serog.
96 *Defects of Speech. (Einige für den praktischen Arzt wichtige Kapitel der Sprachheilkunde.) E. Fröschels. Commenced in No. 42.
97 Dietetic Treatment of Gout. P. Le Gendre.
98 Abderhalden's Serodiagnosis of Tuberculosis. F. Jessen.
99 Vaccine Therapy in Gonorrhea. A. Brandweiner.
100 Syphilis of the Nervous System. ("Lues nervosa.") F. Moerchen.
101 Radial Paralysis from Lead Poisoning. (Radialisparesen bei Bleiarbeitern.) H. Zondek. Concluded in No. 44.
102 The Various Tests for Sugar in the Urine. (Verwendung der Reduktionsmethoden zur quantitativen Harnzuckerbestimmung.) J. Meinertz.
103 Dermatology for the General Practitioner. (Dermotherapeutische Winke für den Praktiker.) J. Schäffer.

96. **Treatment of Defects in Speech.**—In the course of this study of what the general practitioner can do to ward off and cure defects in speech, Fröschels emphasizes that much can be done in preventing the development of stuttering. When a child hesitates and repeats the last syllable over and over, it is because its little brain cannot keep up with its speech; it keeps repeating the last syllable until it can think of the proper word to go on with. This is not pathologic, but it becomes so if the child's attention is drawn to this habit. The family and friends must have impressed on them with great emphasis that it is absolutely necessary to refrain from attracting the attention of the child to this slight defect in its speech. It must not be corrected, nor forced to repeat the word over again, and, above all, no impatience should be manifested. If the child's attention is once attracted to this simple repeating of the last syllable the trouble becomes confirmed and we have the severe disturbance of stuttering which may brand the individual through life and make him hold aloof from his kind.

### Monatsschrift für Kinderheilkunde, Berlin

*XII, No. 7, pp. 347-452*

104 Four Cases of Congenital Fragility of Bones. (Osteopsathyrosis idiopathica.) E. Klose.
105 *"Salt Fever" in Infants. (Kochsalzfieber bei Säuglingen.) G. Jörgensen.
106 *Rôle of the Sympathetic Nervous System in Infants' Diseases. (Anteilnahme des sympathischen Nervensystems an den Erkrankungen des Säuglings.) E. Tezner.
107 Formation of Antibodies Not Affected by Artificial Feeding. (Ernährung und Antikörperbildung.) H. Kleinschmidt.
108 *Significance of the Wassermann Reaction in Wet-Nurses. (Bedeutung der Wassermannschen Reaktion bei der Verwendung von Ammen.) P. Wesener.

105. **Salt Fever in Infants.**—Jörgensen reviews the literature that has appeared recently in regard to fever caused by giving salt intravenously as physiologic salt solution or by mouth. He gave injections to thirty-two children and concludes from this experience that this fever is caused, not by the salt, but by the bacterial content of the water. When the solution was made with freshly distilled water there was no salt fever. This is of considerable practical importance as physiologic salt solution is so frequently given as a stimulant in various diseases. As to its administration by the mouth, it has always been given by previous experimenters in very large doses. In such doses it increases the permeability of the intestinal wall to all substances, and the fever may have been due to increased absorption of other products from the intestine, including some possibly of bacterial origin.

106. **The Sympathetic Nervous System in Infant's Diseases.**—Tezner has frequently observed in very sick infants an injection of the vessels of the conjunctiva, and necropsy has revealed congestion in all the vessels of the head. This he believes is due to decreased tone of the cranial sympathetic nervous system. This appears only in the severe acute intestinal intoxications. It is never present in chronic intestinal disturbances. Prematurely born infants have a greater tendency to atony of the sympathetic during their first three months than children born at term. This lack of tone in the sympathetic system indicates a grave prognosis.

108. **Significance of the Wassermann Reaction in Wet-Nurses.**—Wesener concludes that a negative or weakly positive Wassermann reaction must not be taken as deciding the question for or against allowing a woman to nurse a non-syphilitic child. The decision must be based on the clinical symptoms, etc., as well.

### Münchener medizinische Wochenschrift

*October 28, LX, No. 43, pp. 2385-2440*

109 *Differences and Analogies between Cells of Different Organs. E. Abderhalden.
110 Participation of Sweat Glands in Corporeal Reflex Phenomena of Emotional Origin, Especially the Psychogalvanic Phenomena. J. Leva. (Ueber die physikalisch-chemischen und physiologischen Vorgänge im menschlichen Körper, auf denen der psychogalvanische Reflex beruht.) M. Gildemeister.
111 Reinfection with Syphilis after Salvarsan. (Zur Biologie der humanen Syphilis.) Gennerich. Concluded in No. 44.
112 *Salvarsan in Syphilis. F. Berger.
113 *Camphor in Pneumonia. H. Leo.
114 Technic for Autoplastic Exclusion of the Pylorus. (Ueber unsere Dauerresultate bei der Pylorusumschnürung mittelst Faszie, Ligamentum teres hepatis und Netz nach Wilms als Ersatz der unilateralen Pylorusausschaltung.) K. Kolb.
115 Telecardiography. (Der Telekardiograph, ein Ersatz des Orthodiagraphen.) L. Huismans.
116 *Prolapse of Rectum in Children. (Zur Operation des Mastdarmvorfalls bei Kindern.) H. Lengnick.
117 Workingmen's Compensation and Health Insurance in Roumania. (Handwerker- und Arbeiterkrankenversicherung in Rumänien.) E. Toff.
118 The Artist and the Physician. (Die Hohe Schule für Aerzte und Kranke. VIII.) M. Nassauer.

109. **Specific Structure of the Cells.**—Abderhalden shows that it need not be regarded as so wildly improbable that the building-stones of the different organic compounds may be arranged in a specific manner for each organism. Untold billions of combinations of specific building-stones must exist if each kind of cell is to be credited with its individual protein, demonstrable by biologic tests. We know about twenty of these different building-stones, the amino-acids, and we meet ever the same amino-acids throughout nature. He shows by mathematical computations the exact figure of possible combinations of even twenty different amino-acids; it is in the quintillions. Consequently, the assumption that every kind of cell has a special structure, characteristic for itself alone, is well within the possibilities. Comparative research has shown that cells which have the same tasks in the different individuals of the animal species have certain points of similarity in their structure. The assumption is therefore possible that besides their entirely specific individual structure, certain groups inside the cell exist which control certain functions. Throughout the whole animal series the organs

on which certain tasks devolve, alike through the animal series, all possess certain protein substances which are alike in all. This is evident from the fact that serum which contains protective ferments against a certain organ tissue digests this tissue, not only when it is derived from an animal of the same species, but it also digests the corresponding cell protein of entirely different species. For example, in the serodiagnosis of pregnancy the placenta of one animal can be used for other kinds of animals. He calls this a new biologic law and emphasizes its practical importance as it permits the organs of different animals to be used in clinical biologic tests. He remarks that while everything else in the cell may be different, yet one single protein may be identical and this gives the characteristic response. He compares it to the way in which a musician can detect the sound of different instruments in orchestral music while the unpracticed ear hears only the music as a whole.

112. **Salvarsan in Syphilis.**—Berger combines salvarsan and mercury inunctions and here reviews his experience in a military hospital and recent reexamination of numbers of patients from 16 to 22 months afterward. Although he regards it as almost certain to abort the disease yet he insists on chronic intermittent treatment for five years. If the Wassermann reaction is repeatedly negative, he gives mercurial treatment alone, but if it can be made positive he interposes a supplementary course of salvarsan during the second year. About three-fifths of all syphilitics can count on a permanent serologic cure. Disagreeable sensations in the gums were observed in a few cases, a bitter taste in the mouth, pulsation in the gums, and he warns that when the gums feel hot and prickle the salvarsan should be suspended. These sensations in the gums in one case preceded by two days a fatal encephalitis after salvarsan. In one case an almost somnambulistic condition followed the salvarsan. No secondary symptoms or positive Wassermann were found in any of the patients followed to date since 1910-11 who were given treatment in the primary stages. All but one have been free from recurrence among the thirty-six in the secondary stage. Negative Wassermann dropped from 70.4 per cent. to 61 per cent. in those with secondary syphilis one year after infection, and from 77.5 per cent. to 58 per cent. in those in the secondary stage two, three or more years after infection.

113. **Camphor in Pneumonia.**—Leo was able to protect numbers of mice against pneumococcus infection by subcutaneous injection of a saturated aqueous solution of camphor; the results were less constant with rabbits. These experiences suggest that camphor should be given systematically from the start in pneumonia. He thinks it is able to kill the pneumococci in the blood stream and promote reabsorption of the pneumonic exudate. Camphor has also a marked action in increasing the ventilation of the lungs, the amount of air inspired being very much larger under the influence of the camphor, while the drug stimulates the action of the heart and more blood is thus pumped into the lungs. As twitching was noticed in the animals with a dose of 5 c. c. per kilogram of body weight, smaller proportional doses must be used in the clinic, about 150 or 200 c. c. for a weight of 145 pounds. This represents 0.142 gm. of camphor as each 100 c. c. of the saturated aqueous solution contains 0.21—0.28 gm. camphor. He prefers Ringer's fluid instead of plain water for the vehicle. He quotes Lenzmann to show that 75 c.c. corresponding to 0.1 gm. camphor, can be injected intravenously without disturbance. Lenzmann is soon to publish a report of his experience in this line. Boehncke has already reported favorable experience with camphor plus pneumococcus serum.

116. **Prolapse of the Rectum in Children.**—Lengnick calls attention to the excellent results he obtained in a recent case by drawing up the passage above the anus by means of a strip of fascia taken from the child's own thigh, similar to Thiersch's ring technic.

### St. Petersburger medizinische Zeitschrift

*October 28, XXXVIII, No. 20, pp. 241-252*

110 Uterine Hemorrhage. (Ueber Metrorrhagien.) H. Luchsinger.

### Zeitschrift für Kinderheilkunde, Berlin

*IX, No. 1, pp. 1-86. Last indexed Nov. 1; p. 1673*

120 An Eruption Preceding Measles. (Ueber das Vorexanthem bei Masern.) H. Koch.
121 Occurrence of Hippuric Acid in the Urine of Infants. S. Amberg and H. F. Helmholz.
122 Reaction of Mother's Milk Is Neutral. (Ueber die Reaktion der Frauenmilch.) H. Davidsohn.
123 *Treatment of Stenosis of the Pylorus in Infants. R. Hess.
124 *Specific Nephritis in Congenital Syphilis. H. Hintzelmann.
125 Sugar Content of Children's Blood. (Der physiologische Blutzuckergehalt beim Kinde nach der Mikromethode von Bang.) Götzky, H. T. Bing and O. Windelöw.
126 The Cutaneous Tuberculin Reaction Is Specific. (Zur Frage der Spezifität der cutanen Tuberkulinreaktion nach v. Pirquet.) M. Kasahara.

123. **Stenosis of the Pylorus in Infants.**—Ibrahim's figures for the mortality from stenosis of the pylorus in infants are 46 per cent. for those treated medically and 54 per cent. of those operated on. Hess describes two cases operated on by a method devised by Ramstedt, which consists simply in cutting the pyloric ring sagittal to the intestine leaving the mucous membrane intact. The abdomen is then closed. The operation is so much simpler and shorter than any other that it offers hope of reducing the high mortality in this condition.

124. **Specific Nephritis in Congenital Syphilis.**—Hintzelmann accepts the existence of a specific chronic nephritis due to hereditary syphilis. He examined forty-one persons in the secondary stage and found that fourteen of them had nephritis. He gives the case-histories of these fourteen. Other causes for the nephritis were excluded. In twenty-eight tertiary cases examined, only three of the patients had nephritis. In two of these the nephritis was probably due to inunction treatment with mercury which sometimes causes symptoms of nephritis. He states that internal administration of mercury never seems to cause nephritis.

### Zentralblatt für Chirurgie, Leipsic

*November 1, XL, No. 44, pp. 1705-1736*

127 Alcohol in Prevention of Acute Cocain Poisoning. A. Herzfeld (New York).
128 Exclusion of Pylorus. (Die Intraparietomuskel-Pyloropexie als Methode der Pylorusausschaltung bei Gastroptose mit Gastroektasie.) C. Mariani. (Verschluss und Suspension des Pylorus nach Gastroenterostomie mittels des Lig. teres hepatis.) Hercher.
129 Technic for Nephrotomy and Resection of the Kidney. S. Rubaschow.

### Zentralblatt für Gynäkologie, Leipsic

*November 1, XXXVII, No. 44, pp. 1613-1644*

130 Correct Language in Technical Communications. (Ueber unsere Schrift- und Vortragssprache.) C. v. Wild.
131 *Resection of the Promontory for Permanent Enlargement of the Pelvis. H. H. Schmid.
132 Case of Rupture of the Uterus during Delivery Traced to Gonorrhea. A. Solowij.

131. **Resection of the Promontory to Enlarge Contracted Pelvis.**—Schmid and Rotter both conceived the idea about the same time that it might prove possible to enlarge permanently a contracted pelvis by cutting a slice off the projecting promontory, and Schmid has performed the operation on eight women. One of them has since passed through another pregnancy and he here reports the case in detail. It confirms the assumption that it is possible in this way to reduce the projection of the promontory by 2 cm. and permit delivery of a living child by the natural passages. As a rule, the operation is done supplementary to the classic cesarean section, and consequently it can be applied only when there is no suspicion of infection. A tendency to sciatica for a time was noted in one of the patients but it proved transient, and in none of the eight women was there any disturbance in the gait or pain in standing, walking or stooping over. The fear that callus would develop and annul the effect of the operation has proved groundless. At the operation the uterus is drawn forward and pushed up; the posterior sheet of the peritoneum is incised for 10 cm., and the assistant holds the wound open and the sigmoid flexure out of the way; no instrument proved so convenient for this as the fingers in his experience.

### Gazzetta degli Ospedali e delle Cliniche, Milan

*October 26, XXXIV, No. 128, pp. 1335-1350*

133 *Primary Tuberculous Process in Shaft of Tibia; Recovery after Resection. A. Ruffo.

*October 28, No. 129, pp. 1351-1358*

134 *Epinephrin and Abortion. (Puo l'adrenalina provocare l'aborto?) T. Silvestri.

*October 30, No. 130, pp. 1359-1366*

135 *Extreme Rarity of Recovery from Sleeping Sickness. (Sulla guaribilita della tripanosi o malattia del sonno.) V. Grossule.

133. **Tuberculous Diaphysitis.**—As primary tuberculous processes so seldom start in the shaft of a long bone, Ruffo suspected syphilis in the apparently healthy man when the left tibia began to bulge in two places, with a dull pain in the region whenever the leg was used much. A vigorous course of mercury caused slight transient improvement—probably from the incidental resting of the leg—but then the process continued to progress in the poorly nourished patient. The limb was never tender on moderate pressure, and there was no fever. Roentgen examination showed in the middle third of the tibia the bone rarefied at two adjacent protruding points on the front of the bone. Recovery was soon complete after excision of the foci. Tuberculosis generally avoids tissues that are extremely vascular or extremely non-vascular; Küttner in 2,100 cases of tuberculous processes in bone encountered only six in which the primary location was in the shaft of a long bone.

134. **Epinephrin and Abortion.**—Silvestri remarks that recent reports in the literature of the benefit from epinephrin in osteomalacia, in uncontrollable vomiting and other disturbances in pregnant women, led him to give epinephrin in such cases, as all the writers emphasized the harmlessness of this treatment in the dosage advised. Two recent experiences, however, tend to contradict the assumption of the harmlessness of this treatment: Two women in the second month of pregnancy were given a mild course of epinephrin and calcium salts on account of an incipient apical process and defective nutrition. Each aborted in less than a month. He has given this treatment to other women in later months of pregnancy and never before witnessed any tendency to abortion. One of the present patients had taken it without disturbance during the last three months of a preceding pregnancy.

135. **Sleeping Sickness.**—Grossule writes from the Belgian Congo district that persons who have apparently recovered from sleeping sickness are liable still to harbor the parasites when reexamined years later. In one such case no trace of them could be found two years after treatment but reexamination two years later disclosed a few trypanosomes in the blood and the cerebrospinal fluid although the man has shown no symptoms at any time since his supposed recovery. Only 100 survived to leave the hospital of the 1,100 patients in his charge, and only thirty-eight of these were clinically cured. In this group fifteen have already shown signs of returning trouble and he is convinced that it is only a question of time when the disease will rouse anew from its long latent stage in the others.

### Tumori, Rome

*III, No. 1, pp. 1-160*

136 *Pathogenic Blastomycetes in the Etiology of Carcinoma. D. B. Roncali.
137 *Carcinoma and Fever. M. Giordano.
138 Pathogenic Action of the Saccharomyces Neoformans Sanfelice. M. Magnini.
139 Perithelial Sarcoma of the Left Subclavicular Muscle. R. Brancati.
140 *Autolysates of Embryonal, Fetal and Cancer Tissues in Treatment of Cancer, and History of Evolution of Basal Theory. (Evoluzione della teoria del disquilibrio oncogeno e della chemoterapia istogena per la genesi e la cura dei tumori maligni.) G. Fichera. Concluded in No. 2.

*No. 2, pp. 161-308*

141 *Salomon-Saxl Urine Sulphur Test for Cancer. M. Pasetti.
142 *Technic for Meiostagmin Test for Cancer. G. Di Quattro.
143 *Pararenal Tumors. V. Saviozzi.

136. **Etiology of Cancers.**—Roncali sums up his extensive research and review of the research of others in the statement that the evidence to date seems to indicate that several parasites and consequently several toxins are involved in the causation of cancer. The blastomycetes and their toxins represent only one of the numerous etiologic factors concerned.

137. **Cancer and Fever.**—Giordano tabulates the details of a hundred cases of cancer in which the temperature was studied; fever was evident in 60 per cent. for which no explanation could be found except the cancer itself. In some cases the temperature began to go up in the evening, accompanied by severe headache, and in the course of the night, the temperature dropped, with profuse sweating, and in the morning was a trifle below normal. In other cases the temperature kept high for a week or so, with an intermittent type of fever. In still others the temperature kept throughout of an intermittent type; this was most common with sarcoma; in one case of epithelioma of the uterus the temperature fluctuated according to the quartan fever type. In the majority of cases, however, when the temperature was above normal it kept at an even figure. This continuous type of fever may mislead in the diagnosis unless physicians bear in mind always the possibility of a continuous high temperature in the prodromal period and during the course of malignant disease.

140. **Autolysates of Embryonal, Fetal and Cancer Tissues in Treatment of Cancer.**—Fichera here gives the history of the evolution of the theory on which he bases his treatment of malignant disease. (It was described fully in The Journal, Aug. 6, 1910, p. 545, and June 10, 1911, p. 1769, and the technic was given Jan. 18, 1913, p. 228.) He states that evidence is constantly accumulating to sustain the assumption that the cause of malignant disease is a loss of balance between the chemical and morphologic factors of growth, and that the balance can be restored by supplying from without certain constituents or derivates of the cells—the histogenous therapy of malignant disease. Blumenthal, Lewin and Pinkuss have reported favorable results from treatment along these lines, and many others have confirmed the action of autolysates of normal or cancerous tissues in inducing involution of experimental and clinical cancers. Fichera emphasizes that this histotherapy or histogenous chemotherapy is based on a different principle from that of vaccination; among other reasons, on account of the fact that the latter presupposes parasitic origin, while Fichera declares that there is no conclusive evidence to date incriminating parasites in the origin of cancer. On the contrary, everything tends to prove that certain organs have a tumor-destroying property. In the healthy, the immune and the cured, these organs are well developed and active; in the aged, the cachectic and those with advanced tumors, these organs are shriveled and inactive. Fichera and his coworkers have demonstrated this, they think, by their study of the organs of persons with cancer at different stages; by direct grafts in different organs; by the property of immunizing and curing and the degree of this property manifested by extracts of various organs and tissues, normal or pathologic; by the effect of removal of the single organs on the susceptibility or resisting power of the animal to cancer, and on the changes in the tumor-destroying power of the serum of healthy animals injected with the tissue extracts.

141. **The Salomon-Saxl Urine Sulphur Test for Cancer.**—Pasetti applied the Salomon-Saxl technic in 200 cases, including 46 cancer cases, 35 of surgical tuberculosis, 92 of other surgical affections, and 27 with syphilis, giving a positive Wassermann reaction. He tabulates the details of them all. Among the syphilitics the response was constantly negative except that 2 gave a dubious reaction; in surgical tuberculosis the response was negative in over 88 per cent. and in over 89 per cent. of the 48 patients with hernia, while the reaction was constantly positive in 68.7 per cent. of the carcinoma patients and in 35.7 per cent. of the sarcoma cases. The test is so simple and easy, he says, and the findings are so frequently positive in case of cancer and negative in its absence, that the reaction merits high consideration in differentiation of malignant disease. (The technic for it was described in detail in The Journal, May 27, 1911, p. 1593.) Pasetti uses

a sedimentation glass with the tapering tip graduated in millimeters for estimation of the amount of the brownish sulphate of barium sediment thrown down. This represents the neutral sulphur in the urine which has been oxidized by the strong hydrogen dioxid, and he leaves the glass for twelve or fourteen hours before final estimation of the amount of sediment.

142. **Technic for the Meiostagmin Reaction.**—Di Quattro says that the livers of certain birds, rabbits, cats and other small animals may be used as the antigen in the meiostagmin test in place of the extracts of human pancreas or of cancer tissue hitherto deemed necessary.

143. **Pararenal Tumors.**—Saviozzi applies this term to tumors which originate in the fibrous or adipose capsule of the kidney and not in the kidney tissue proper. He has found records in the literature of eighty-two cases of the kind and tabulates them for comparison. In none was the correct diagnosis made beforehand. As a rule the tumor develops without pain, merely the discomfort from the encroaching growth until pains come on late. In some cases, however, pain is the first sign of trouble. In the personal case reported the patient, a woman of 57 had complained for a year and a half of penetrating pains in the right lower quadrant of the abdomen; then the tumefaction was discovered, but the operation did not follow until three years after the first sign of trouble. In only thirteen other cases were pains the initial symptom. The urine was normal throughout except in Lothheissen's and in Ranzi's cases in which the tumor had compressed the ureter and caused intermittent hydronephrosis. Compression of the bladder induced bladder symptoms in some cases; pollakiuria or retention of urine was noted in the last four months in Saviozzi's case. The legs frequently showed edema and ascites developed in a few rare cases. Two of the patients had fever and there was slight continuous fever in Saviozzi's patient, but it disappeared at once after the operation. Fluctuation was noted in eight of the cases but exploratory puncture failed to reveal fluid. The fluctuation generally led to assumption of an ovarian or echinococcus cyst. In the 69 operative cases nephrectomy was applied in 38 and the kidney was left intact in 12; there were 21 cases with a fatal outcome and 32 recoveries; recurrence is known in 3 cases and in 13 cases the final outcome is not known. The fatality in several cases was due to hemorrhage during or soon after the operation, and in Kümmel's case to hemorrhage the second day from injury of the spleen. In seven cases the conditions found at the operation forbade the complete removal of the tumor. The article is accompanied by three colored plates showing the findings in Saviozzi's case.

### Brazil-Medico, Rio de Janeiro

*October 15, XXVII, No. 39, pp. 414-425*

144 Differential Diagnosis of Pott's Disease. M. Gesteira. Commenced in No. 38.

### Semana Medica, Buenos Aires

*October 9, XX, No. 41, pp. 813-868*

145 Abderhalden's Serodiagnosis of Pregnancy. (La suero-reaccion del embarazo—Abderhalden.) J. A. Gabastou and W. Widakowich.

146 Sewage and Water Supply. (Eliminacion de los productos cloacales y residuos industriales. Progresos de la depuracion biologica en los diferentes paises.) P. J. Pando.

147 Cataract from Electric Accident. (Patogenia de la catarata por rayo y por descarga electrica.) M. Pannunzio.

148 Specialization in Medicine. J. S. Fernandez.

### Norsk Magazin for Lægevidenskaben, Christiania

*November, LXXIV, No. 11, pp. 1449-1600*

149 *General Paresis in Boy of 10. A. Collett.

150 *Spontaneous Recovery of Renal Tuberculosis. (Kan nyretuberkulosen helbredes spontant?) F. Harbitz.

151 *Hodgkin's Disease. (Om malign lymfogranulomatose.) K. Motzfeldt.

149. **Juvenile General Paralysis.**—Collett gives two colored plates of the findings in the brain of a boy of 11 who had succumbed to general paralysis evidently the effect of inherited syphilis. The child had developed normally and was bright for his age until he was 7 years old. Then an operation was done on the lacrimal sac under general anesthesia, and almost at once afterward the boy's entire character and mentality changed and later the symptoms of general paralysis gradually developed with pupil phenomena and exaggerated reflexes, but no signs of focal disturbances. In connection with this case Collett reviews the literature on the subject of progressive paresis in children. Over 250 cases are on record and in 160 in which the details are known, inherited syphilis was certain in 105, probable in an additional twenty-five, possible in twenty and acquired syphilis was certain in ten instances. Puberty, the puerperium, trauma, masturbation or infectious diseases are stated to have been contributing factors in a number. His own case teaches the necessity of caution in administering a general anesthetic to a child with possibly an inherited syphilitic taint. A history of abortions preceding or following the birth of the child in question should be a special warning. The symptoms and course in children are about the same as in adults, but the pupils are more liable to be dilated rather than contracted. No treatment seems to do any good, he remarks; mercury does direct harm.

150. **Spontaneous Healing of Renal Tuberculosis.**—In routine necropsy work during the last few years, Harbitz found signs of an old tuberculous process in a kidney in twelve cadavers; it had evidently run its course and become encapsulated spontaneously, with what amounted to a clinical cure. In some of the cases the renal tuberculosis had existed for four, six, eight or ten years, and even twenty years in one instance. The processes were of all kinds from the ulcerative to the "sclerosing." In six of the cases the chronic process had become completely encapsulated and the pelvis and ureter were entirely obstructed. Of special interest is the finding that a tuberculous process in the bladder had evidently healed completely after the kidney lesion above had been thus walled off. The data presented reaffirm the rarity of primary tuberculous lesions in the bladder; also that the bladder becomes affected comparatively late in the course of renal tuberculosis, and also that the bladder process generally heals when the kidney process is removed or encapsulated.

In one of the cases reported the tuberculous lesion in the kidney had perforated outward, and yet the whole had healed spontaneously and the fistula closed. In four of the cases the kidney process had not caused appreciable clinical symptoms or merely slight transient manifestations. A tuberculous focus in the kidney is a constant menace to the rest of the organism; two of the patients succumbed to secondary meningitis or miliary tuberculosis, and three to nephritis in the other kidney. Another point brought out by this material is that congenital malformations or displacement of the kidney seem to play an important part in inviting the development of a tuberculous process in a kidney. This was evident in three of the above cases.

151. **Hodgkin's Disease.**—Motzfeldt gives an illustrated description of a number of his ten cases of malignant lymphogranulomatosis, and compares them with similar cases on record. He regards it as a clinical entity, saying that there is no evidence that connects it with tuberculosis, not even with attenuated tubercle bacilli or their toxins or Much's granula. The testimony to date shows that it resembles most the infectious granuloma, but it does not seem to be of the nature of a neoplasm, although a malignant nature seems evident. A transition to leukemia or sarcoma has never been observed. The ages of his patients ranged from 8 to 57.

### Ugeskrift for Læger, Copenhagen

*October 23, LXXV, No. 43, pp. 1717-1752*

152 Constancy of the Reflexes. C. H. Würtzen.

153 Case of Hysteria Magna. E. Clausen.

*October 30, No. 44, pp. 1753-1776*

154 Improved Technic for Blood Count. (En Modifikation af Hayems Vædske.) G. Jørgensen.

### Upsala Läkareförenings Förhandlingar

*XVIII, No. 7, pp. 457-548. Last indexed Oct. 25, p. 1582*

155 Improved Ophthalmometer. (Om mätning af främre ögonkammarens djup med ett nytt, för kliniskt bruk afsedt [illegible] F. Lindstedt.

156 [illegible] eutic Pneumothorax. (Eine Kanüle zum [illegible] gen nebst kritischen Betrachtungen über [illegible] ngewandten Methoden.) E. Lindhagen.

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# THE SCIENTIFIC BASIS FOR VACCINE THERAPY *

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As a justification for any method of treatment, especially if the method is novel and all-inclusive in the field of proposed application, it is essential that those who apply the method should be convinced that it is based on adequate experience. This basis may be that established by the statistical method of clinical medicine, or it may be that of definite experimentation leading to logical clinical application.

By the statistical method of clinical medicine is meant the study by many physicians of the efficacy of a certain form of treatment as applied to a great number of persons suffering from the same disease. Though we describe treatment so based as empiric in method, such description does not necessarily minimize the importance of the method of treatment or of study on which it is based. Too many remedial agents, though introduced at first in curious and diverse ways, have stood the test of the statistical method to justify the position that clinical experience is not an adequate test. The method, however, is a slow one. Its success is dependent on so many details that not infrequently, in the case of a method which attracts such wide attention as has vaccine therapy, the results are as apt to be contradictory through lack of uniformity in method as they are to be exaggerated through the enthusiasm of the individual.

In the field of vaccine therapy, as practiced in this country to-day, it cannot be denied that this contradiction exists and that opinions of the greatest diversity may be obtained. On the one hand, the enthusiasm of its advocates has no limit, and on the other, even among thoughtful physicians, there are few who, while conscious of the exaggerations of the scope of application and the results of vaccine therapy, are not in doubt concerning their duty in the use of the method. These turn to the second guide to rational therapy—the experience gained by laboratory and allied experimentation—and ask what definite scientific basis we have to rest on while we wait for the verdict of the slower statistical method of clinical medicine. But here the laboratory hesitates, and with some embarrassment urges only caution. It can point with pride to the scientific basis for prophylactic vaccination, but has little to offer in the way of support of therapeutic vaccination either as to its efficacy or as to its harmfulness.

The history of small-pox inoculation and vaccination affords an interesting combination of clinical observation—both statistical and experimental—in the establishment of the first known form of prophylactic vaccination. Later Pasteur's experimental demonstration of the principle that a weakened virus (anthrax, chicken-cholera) capable of producing the disease in a mild form renders the host immune from future infection supported the common popular experience concerning naturally acquired immunity, and also the experience with small-pox.

In more recent years the successful use of vaccination against typhoid fever has offered an excellent demonstration of the value of prophylactic vaccination. The principle of prophylactic vaccination is sound, since it agrees with the knowledge concerning acquired immunity based on the clinical (statistical) method as well as the method of the laboratory based on animal experimentation, and, moreover, in its practical application has been confirmed again and again by the statistical method of the clinic.

Concerning the scientific basis for prophylactic vaccination in the fields of its successful application there can be no question. To fortify an animal against a specific infection by producing, in mild form, the disease in question is a procedure against which no objection, scientific or ethical, can be raised. Quite different is the situation in regard to therapeutic vaccination, a procedure which, despite the fact that the idea originated with Pasteur and has therefore as a principle the support of which Pasteur's name and work offer, it is difficult to reconcile with many of the principles of immunity. But Pasteur's idea was not quite analogous to that on which modern indiscriminate vaccination is based. His antirabic vaccination was, it is true, a treatment after infection, but not after the development of the disease. The object was to develop rapidly an immunity after the individual has been bitten in the hope of preventing the full development of the disease—not the cure of the disease after it has developed.

The present wide-spread use of vaccines dates back only to 1902 and to A. E. Wright's advocacy of the use of dead bacteria in various chronic infections caused by these bacteria. At first the method was considered applicable only to chronic infections and for the most part to circumscribed lesions. Now, however, in the hands of its later enthusiastic advocates, it is applied to practically every form of bacterial infection, whether acute or chronic, local or disseminated.

It is possible, therefore, to trace the development of the theory of vaccination through three stages: (1) The principle of prophylaxis, that is, the production of immunity through the development of a disease in a mild form (small-pox, anthrax, chicken-cholera, typhoid fever); (2) the rapid production of immunity after infection, but before the disease manifests itself by its peculiar symptoms (Pasteur's antirabic vaccination), and (3) curative vaccination, or vaccination after the

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* An amplification of a short communication prepared for the meeting of the Medical Society of the State of Pennsylvania, held at Philadelphia, Sept. 22-25, 1913, but not read.

disease is established and has produced its local anatomic lesions and the attendant physiologic disturbance which we call symptoms.

Concerning the scientific basis of the first and second of these principles, no question arises; only the third is in doubt. Unfortunately for purposes of exact exposition, the clinical extension of vaccination has been so all-embracing, so many diseases have been attacked in a hit-or-miss way, that experimental investigation with its slow and time-consuming methods, so necessary for exact interpretation and conclusive opinion, have not kept pace with empiric practice, and indeed it is doubtful if experimental medicine can adequately study these problems. As Theobald Smith[1] has pointed out, most of the types of disease (typhoid fever, pneumonia, puerperal sepsis, general streptococcus infection, gonorrheal metastasis, and the like) are not exactly reproducible in the laboratory. Moreover, the natural occurrence of local lesions in animals is rare, and their experimental production is followed rapidly by spontaneous healing. These two important types of disease—the one with general dissemination of the causative agent through the blood and the other the purely localized lesion—which are treated at present by the clinical vaccinator are, therefore, difficult of study by the methods of experimental medicine. So also is it with the question of vaccination of typhoid carriers. A typhoid cholecystitis artificially induced in the rabbit in an attempt to reproduce the condition of the human carrier is hardly a real analogy, for the rabbit is not peculiarly susceptible to typhoid infection, and the apparent effect of vaccination would be more conclusive if the infection were induced with an organism to which the rabbit had a normal susceptibility.

The difficulty of reproducing certain bacterial diseases in animals, and the failure of these diseases to follow their course as seen in man, as well as their tendency toward spontaneous cure, minimizes the possibility of utilizing this phase of laboratory method as a means of establishing the efficacy of vaccine therapy in diseases of prolonged course. In acute septicemic disease due to virulent organisms, with early death or rapid recovery as the two possibilities, the experimental method offers some promise, but such diseases are not those amenable to vaccine treatment.

It is through studies based on the latter type of experimental disease that our present extensive, but not at all conclusive, knowledge of infection and immunity is based. It is only in an indirect way, however, that this knowledge can be applied to vaccine therapy. It may be argued that as the line between health and disease is defined clinically with difficulty, so the principles underlying prophylactic immunity may be merged one into the other (Smith). Thus we may harbor disease germs, as the pneumococcus, with perhaps slight infection or slight intoxication, without being aware of it clinically. So also while we speak of antirabic vaccination after infection as prophylactic, it is difficult to say on account of lack of knowledge of the pathology of this disease where the prophylaxis ends and the curative effect begins.

The enthusiastic supporters of curative vaccination stretch this possible application to cover all forms of vaccine treatment and assert that the introduction of large numbers of extraneous bacteria stimulate the natural immunizing process to greater activity, thus artificially fostering the slow process of naturally acquired immunity. For this extension of exact knowledge to cover more than certain localized or slowly developing infections there is no basis in fact. Such enthusiasts lose sight of the fact that there is no common mechanism of immunization. The process differs not only according to the type of infecting organism but also according to its virulence and the localization of its toxin in the host; also variations in the reaction of the infected host play an important part.

No more important principle has resulted from immunologic studies than that the process of immunity in each infection must be studied by itself. The principles of immunity to one infection or poison cannot be applied to another, even if both are due to organisms apparently elaborating their poisons in the same way. For example, compare the difference in action of the specific serums for two organisms—the diphtheria bacillus and the tetanus bacillus—each of which produces a soluble toxin. One is curative, the other at best prophylactic. If this difference occurs in the serum therapy of diseases produced by soluble toxins, and our knowledge of these is perhaps the most satisfactory, how unwise it is to apply a general rule to vaccine therapy, our scientific knowledge of which is so slight.

Is it logical to apply the same procedure to a definitely localized lesion such as the staphylococcus abscess and also to a bacteriemia such as that due to the streptococcus or pneumococcus? Immunology has taught us that many cooperating and interacting forces are concerned, as antitoxins, bacteriolysins, opsonins, agglutinins and phagocytosis. Not all cooperate equally; in one disease, antitoxin formation appears to be the essential mechanism, in another phagocytosis, in a third bacteriolysin, and so on. In no two diseases is the interaction the same, and the reaction may vary according to the individual characteristics of the infected individual. These factors were emphasized by Wright, but are seldom considered by the present-day clinical vaccinator, who applies the same method to all infections. They are, however, the factors on which the scientific basis of vaccine therapy, if it is to be attained, must rest. As many of the known diseases cannot be exactly reproduced in animals, and as reactions vary in different hosts (species), the scientific basis of vaccine therapy can be obtained only through the careful studies of clinical research controlled by the accurate methods of the experimental laboratory. As Smith[2] stated some years ago, "The practicing physician in cooperation with the clinical laboratory will have to work out his own salvation, and this can be done only with the aid of the most rigorous and painstaking methods which medical science can supply. Any other course is certain to lead astray."

The discussion of curative vaccination may be simplified by dividing infections into two groups, the localized and the disseminated. In the case of localized chronic infections, a plausible explanation is at hand and it is this which probably elucidates the frequent successful use of vaccines in this group and fully justifies their use.

A chronic localized infection is probably such because the infected individual has a degree of resistance sufficient to prevent the spreading of the infection. This localization may operate, through a walling off by new tissue and therefore imperfect exchange of fluids, to prevent the entrance in adequate amounts of immune bodies from the blood and lymph, or the bacteria may have become resistant to the mild attack of diluted immune bodies. Surgical intervention may overcome this by allowing, through incision, the escape of easily evacuated contents and the destruction of the infecting agent by the immune elements in the large amounts of fresh blood or lymph which enter the area of infection. Also the dissemination of the bacteria locally may aid to increase antibody formation. Vaccine therapy substitutes for surgical intervention the injection of large numbers of dead bacteria in locations from which their immunity-stimulating substance or substances may be readily absorbed. These acting as a stimulus cause the formation of antibodies, which, entering the blood-stream, rapidly raise the content of immune substances in the body fluids, and these in turn coming in contact with the local lesion, and disturbing the equilibrium between the bacteria and the local reaction, may lead to the overwhelming of the infecting agent.

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[1] Smith, Theobald: An Attempt to Interpret Present-Day Uses of Vaccine, The Journal A. M. A., May 24, 1913, p. 1591.

[2] Smith, Theobald: What is the Experimental Basis for Vaccine Therapy? Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1910.

This theory is supported by our knowledge of leukocytosis—the hyperleukocytosis of an acute non-encapsulated lesion and the normal or hypoleukocytosis of a chronic *localized lesion*. In the latter circumstance substances stimulating leukocytosis do not escape, and the reacting mechanism in the bone-marrow is not stimulated. The condition is analogous to the failure of increased immunity under the same circumstance; indeed, it is difficult to deny that the mechanism of leukocytosis is not perhaps the most important mechanism of the immunizing process in disease characterized by local suppuration. As a practical rule one would expect the administration of vaccine to be of value in local suppuration with a normal or hypoleukocytosis and to be superfluous in that with hyperleukocytosis. This question has been studied in connection with Wright's opsonin index, but in later years, with the increasing doubt concerning the value of this index, the interesting problems of leukocytosis in connection with vaccine therapy have been largely neglected by the clinical vaccinator.

In the second group of infections, those characterized by general dissemination and invasion of the blood-stream, the situation is entirely different, and for curative vaccination no scientific basis, as the result of experimental investigation, can be offered. We know that toxemia and fever are the natural results of bacterial activity and, moreover, that the presence of the former in some degree is essential to the initiation of the immunizing process, and that under experimental conditions this process occurs more rapidly at temperature above the normal than it does at normal temperature. It is difficult therefore to understand how the immunizing process can be hastened, if severe toxemia and hyperpyrexia are already present, by increasing the intoxication by the artificial introduction of more toxin. The argument used to support the treatment of local infections cannot be used here, for in a general septicemia, with organisms in every tissue of the body, the addition of a few million organisms more or less cannot be a factor of great importance; moreover, with such wide dissemination of the infecting agent it would seem impossible, by injection, to bring into action new cell territories, not already involved, for the local production of immune bodies.

It is theoretically possible, on the other hand, in those cases of parasitism—the carriers—in which the toxicity of the persisting organism is of low degree and produces slight clinical symptoms (no fever and no toxemia to stimulate a higher grade of immunity) that the introduction of dead bacteria, capable of being immediately utilized, stimulates the higher level of immunity necessary for the termination of the parasitism. In such cases, vaccine therapy, in that the mechanism of increasing immunity is analogous to that in local infections, would appear to be of value; practically, the treatment of typhoid carriers by vaccination has been an absolute failure.

This summary indicates that we have at least a plausible theory on which to base the practice of vaccination in localized chronic infection; a possible extension of the same theory to carriers, but no experimental or other scientific basis for vaccination in diseases characterized by wide dissemination and general infection.

It is not a part of this discussion to take up seriatim the use of vaccines in the various infections. Certain practical phases of the present use of vaccines must, however, be considered.

### AUTOGENOUS VACCINES VERSUS MIXED VACCINES

In all the early work curative vaccination was based on the principle of making a vaccine from the organism responsible for the lesion of the person to be treated. In this early work the bacteriologist was therefore an important agent, not only in the isolation of the organism, but likewise in the preparation of the vaccine. The field was as a result largely occupied by expert bacteriologists or those specially trained to the needed technic. It is probably for this reason that such excellent results were obtained, especially in the treatment of local infections, to which the procedure was at first limited. Later it was considered justifiable to prepare a vaccine for each of two associated organisms, but still the principle of "autogenous" vaccines held and the vaccines were always prepared from the lesion to be treated. Still later, with the commercialization of vaccines, not only was the principle of autogenous vaccine largely abandoned, but three, four or half a dozen organisms were included in one mixture, thus inaugurating a bacterial polypharmacy, if the term may be used, as absurd and unscientific as the "shotgun" prescribing of our older drug therapeutics. A mixed vaccine for common "cold" containing seven micro-organisms (staphylococcus, streptococcus, pneumococcus, *Micrococcus catarrhalis* group, bacillus of Friedländer group, diphtheroid, *Bacillus influenzae*) is of one of the most recent bacterial "shotgun" mixtures, which takes the chance of one lucky bull's-eye in seven shots. No one can claim a scientific or even a common-sense basis for the treatment of a cold by such a mixture. It relieves the physician of the necessity of an etiologic diagnosis, discourages the search for contributing factors, and subjects the patient to uncontrolled experimentation with the "newest thing out." When one remembers that most of these so-called "mixed vaccines" are not vaccines in the sense of the word as used by Pasteur and Wright, that is, the bodies of killed bacteria in suspension, but are the "sterile aqueous solutions of metabolic substances generated by bacteria grown in artificial mediums,"[3] the possibilities of subjecting the patient to multiple intoxications, not essential to his recovery, are apparent. To inject a carefully prepared autogenous vaccine, that is, the centrifugalized and washed bodies of dead bacteria *similar to those* causing the disease, in the hope of stimulating immunity in a mild and gradual way, is a defensible procedure; but to inject the soluble products of half a dozen or more pathogenic bacteria is a species of privileged poisoning under the protection of professional usage which few physicians would attempt with the better-known inorganic alkaloidal poisons of the pharmacopeia.

So unscientific and discreditable is the present tendency that all reputable physicians, especially those who sincerely believe in a rational vaccine therapy, should insist, *first*, on an etiologic diagnosis, secondly, on an autogenous vaccine, and, *finally*, on the most careful and painstaking study by *both* laboratory and clinical methods of all phenomena before and after vaccination. The use of more than one vaccine in a given case need not be frowned on; if a lesion contains more than one organism, a corresponding vaccine for the secondary invader may be prepared; but the principle of the autogenous vaccine should be maintained. Commercial mixtures should be avoided at all times, especially if they contain the products of more than one organism. Only by following these rules in the study of large groups of cases can vaccine therapy be placed on a respectable basis. Perhaps cumulative clinical evidence thus obtained may yield eventually a scientific basis.

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[3] See advertising department of almost any medical journal.

### VACCINES IN DISEASES OF NON-BACTERIAL OR DOUBTFUL ORIGIN

One firm which is extensively engaged in the exploitation of the mixed vaccine advertises that "practically all acute and many chronic diseases are caused by the metabolic products of bacteria,"[4] and proceeds to prepare vaccines for diseases the etiology of which is unknown, or at least doubtful. Like the Athenians, who in the fear that they might neglect an unknown deity, provided for the worship of the "unknown god," these manufacturers have their "mixed infection" preparation "applicable to the multiplicity of infections which may be said to be of questionable etiology."[4] This point of view which, it is a satisfaction to state, originated with the manufacturers and not with the profession, coupled with the assurance that vaccines can do no harm, has led to many absurdities in vaccine therapy, and as certain groups of physicians show more and more of a tendency to allow the commercial vaccine-makers to control their diagnosis as well as their treatment, it would seem advisable for the more carefully trained and less susceptible groups of the profession to act reservedly and to advise caution. A recent writer on this subject[5] has given, as example of some of the weird claims or suggestions made (for the most part this is true in trade, not medical journals) supporting vaccination, the use of mixtures of bacteria in the treatment of vertigo, pruritus ani, hay-fever, rheumatism, sciatica, gall-stones, appendicitis and heart-block. The extent to which the manufacturers have impressed the profession was demonstrated at a recent meeting of the most dignified, exclusive and presumably scientific of our national medical organizations, when one of its members discussed the relation of the streptococcus to heart-block and certain mental disturbances and the question of vaccine treatment of such conditions.

Rheumatism, diseases of the bones and joints, and allied conditions have come in for a large share of attention by the commercial maker of vaccines. The "Rheumatism Phylacogen," through a vast amount of advertising, is almost as well known as Ehrlich's salvarsan, but how different its origin and the method of testing its efficacy and of bringing it before the profession! The most ardent supporter of the view that certain forms of joint-trouble may be infectious or toxic in origin cannot accept the opinion of the manufacturer that the same treatment applies equally well to "acute rheumatic fever, acute articular rheumatism, acute inflammatory rheumatism, chronic rheumatism, rheumatic arthritis, rheumatic myalgia, rheumatic iritis, lumbago, sciatica."[4] Despite the inconsistencies of this classification of "rheumatic" (*sic*) affections, many physicians accept the advice, 'broaden the scope of their treatment and gladden the heart of the manufacturer by including many forms of chronic arthritis which he does not mention; but they are consistent to the extent that their additions include diseases of unknown or doubtful etiology. This they do in spite of the fact that the manufacturers definitely tell them that "failure of Rheumatism Phylacogen, properly administered, affords presumptive evidence of an error in diagnosis."[4] Not only is this Phylacogen, according to its supporters, a specific in treatment, but it is also a specific in diagnosis—the equal of quinin in malaria, of tuberculin in tuberculosis, a combined salvarsan and Wassermann reaction in one and the same package—and all this in a group of diseases of doubtful etiology!

To use conservative language, such treatment is purely empiric and wholly speculative. When the joint condition is associated with a focal infection in some distant part of the body and an organism can be isolated and an autogenous vaccine prepared, the use of the latter in addition to local treatment is a justifiable procedure, on the general theory of the vaccine treatment of local infections. When a local lesion cannot be determined and an etiologic diagnosis is therefore impossible, vaccine treatment, "mixed" or otherwise, is indefensible, both on the basis of rational therapeutics and of the ethics which control the physician's relation to his patient.

That many physicians claim excellent results for vaccines in the treatment of diseases of obscure origin is not conclusive. It is in just this class of diseases that the osteopath, the naturopath and others of the same group likewise claim most brilliant results for their peculiar methods. Who is to judge of the influence of a single factor in the treatment of disease? Has not past experience shown that early results with new cures are usually brilliant? How many diseases heal spontaneously or are improved despite any treatment? How important is the psychic influence of a new widely heralded treatment? And, on the other hand, are the unsuccessful results always reported; do we learn, except by accident, of the failure to improve and of sudden death due to the treatment? Many factors must be considered in arriving at an opinion.

The present attitude with regard to vaccination in diseases of doubtful origin promises little for either etiologic diagnosis or specific treatment, the two aims of modern medicine, nor does it aid that broader effort to advance social welfare, in the furtherance of which, medicine, if it is to remain a powerful factor, must be both safe and sane.

If the venturesome practitioner feels compelled to use vaccines in diseases of obscure origin, let him do so, supported by every aid which laboratory and clinical research may offer; but the wiser course, in the absence of a demonstrable local infection from which an autogenous vaccine may be made, is to leave vaccination to others. One fact, the essential mechanism of vaccination, must not be misinterpreted or minimized, and this is especially important in view of the advertised statement concerning commercial vaccines. The statement that "the growth of infecting micro-organisms can be arrested and their effects neutralized by the products derived from their development in artificial culture mediums"[4] is misleading in that it implies direct bactericidal and antitoxic action —which is not the case—and leaves out of the question the only rational explanation of vaccination, that it is the stimulation of the immunizing process in the host. This misleading statement of the commercial vaccine-maker is responsible for much of the misunderstanding concerning vaccine therapy and its curative value. As Theobald Smith phrases it, "Vaccines applied during disease will be rarely, if ever, life-saving, but they may hurry a stationary or languid process which tends to recovery, by hurrying into play the unused reserves of various tissues."

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[4] Advertising notice, Parke, Davis & Co.

[5] Stone, W. J.: The Use and Abuse of Bacterial Therapy, The Journal A. M. A., Feb. 15, 1913, p. 489.

### SUMMARY

1. Prophylactic vaccination rests on a sound scientific basis of experimental study and clinical observation.

2. Curative vaccination has no sound experimental basis, but the application of the general principles of immunity as well as clinical observation offers a plausible basis for the treatment of localized, more or less chronic infections, and of "carriers." On the other hand, no satisfactory basis is at hand for curative vaccination in the acute self-limited diseases characterized by general dissemination and systemic infection. All attempted vaccinations in this group must be considered as purely experimental.

3. The only logical method of vaccination is the use of "autogenous" vaccine. Mixed vaccines, commercially prepared, constitute a type of bacterial polypharmacy which should be discouraged as unscientific and nonethical.

4. Therapeutic vaccination, if it is to be placed on a scientific basis, should be regarded as a method of treatment based on the study of the individual and his infection and not as a ready-made method capable of the universal application of stock vaccines. The use of vaccines in diseases of doubtful or unknown etiology is unscientific and ethically indefensible.

5. Every physician practicing vaccination should bring to bear in the study of his results every method of laboratory and clinical investigation which promises light, and preferably should work with a trained immunologist. Thus only can definite knowledge of the efficacy of vaccination be obtained. It is well to remember the words of A. E. Wright in this connection. Wright asserts that for such skilled service as that demanded by vaccine therapy "is required a man who has spent years of study to master the technic; to know how to make the vaccines, to know where to look for the microbes, to know which are the most important microbes, to know how to isolate them, and, most of all, a man with sufficient experience and ability to apply all these things."

6. In the interpretation of results it should be borne in mind that, as Theobald Smith has emphasized, vaccines rarely, if ever, cure, but act rather in aiding a process which tends to recovery by stimulating a languid process of immunization.

In the preparation of this paper I acknowledge the free use of two papers on the same general subject by Theobald Smith,[6] and one by F. P. Gay.[7]

University of Pennsylvania.

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[6] Smith, Theobald: What is the Experimental Basis for Vaccine Therapy? read before the Massachusetts Medical Society, June 8, 1910; An Attempt to Interpret Present-Day Uses of Vaccines, THE JOURNAL A. M. A., May 24, 1913, p. 1591.

[7] Gay, F. P.: Cal. State Jour. Med., July, 1911.

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**Mistakes Not Always the Result of Ignorance.**—"Even Homer sometimes nods," and the most alert of us sometimes become blind to the significance of symptoms and signs with which we were perfectly familiar at an earlier period of our professional career. Mistakes may thus arise, not so much from a lack of knowledge, as *from the fact that* the possibility of such and such a condition has "never once crossed the mind."—F. W. Langridge, in *Clin. Jour.*

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# THE PROBLEM OF THE CRIMINAL IN THE LIGHT OF SOME MODERN CONCEPTIONS

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Since Lombroso enunciated his views as to the physiognomy of criminals which caused him to place them in a class by themselves, he has gained many adherents with views modified and extended. There has developed, naturally enough, an opposing army of thinkers who may be divided into those who place the blame for criminal offenses entirely on the social environment of the offender, including his training or lack of it from birth to maturity, and those who regard him as wilfully vicious even though morally defective, and therefore responsible for his actions.

It would seem that in the course of the controversy the latter view has steadily been losing ground, while the former has not as yet made good and has lost many from its camp because of disappointing results following half-hearted or impulsive attempts at prison reform without a clear understanding of the material dealt with.

More and more champions of the Lombrosian idea in its essence, namely, that the criminal is inherently abnormal, have come to the front with evidence more or less worthy, and criminology at the present time is fast becoming a medical science rather than a legal one.

Even before Lombroso's publication there appeared in 1870 an article by Bruce Thompson, resident surgeon in the prison at Perth, Scotland, which argued from the medical point of view in strong terms. To quote:

> On the borderland of lunacy lie the criminal populations It is a debatable region; and no more mixed problem comes before the medical psychologist than this, viz., where badness ends and madness begins. The inmates of asylums and of prisons are so nearly allied that thin partitions do their walls divide.

To quote again:

> From large experience among criminals I have come to the conclusion that the principal business of prison surgeons must always be with mental diseases; that the number of physical diseases is less than psychical, and that the treatment of crime is a branch of psychology.

He then lays down the following propositions:

> 1. There is a criminal class distinct from other civilized men.
>
> 2. The criminal class is marked by peculiar mental and physical characteristics.
>
> 3. The hereditary nature of crime is shown by the family history of criminals.
>
> 4. The transmission of other nervous disorders with crime in this class proves the alliance of hereditary crime with other diseases of the mind, such as epilepsy, dipsomania, insanity, etc.
>
> 5. The incurable nature of crime in the criminal class goes to prove its hereditary nature.

Whether these propositions are justified or not, they go to show the impression that a close study of the criminal made on a careful observer before the days of modern psychiatry and psychanalysis, before the realm of the subconscious mind had been explored by Charcot and Janet, Freud and Jung.

But this new school or phase of the subject is by no means on a footing sure enough to convince either the public at large or the legal profession of the justification for its point of view, nor has it received often enough that respectful hearing in the courts which would have prevented injustice being done not only to the prisoner at the bar, but also to society. Nevertheless, complete justice to both offender and society is slowly on the way, and even those who oppose or take no thought of the newer doctrines are unconsciously falling in line with them by their attempts to ameliorate the condition of the convict, by agitating for prison reform, indeterminate sentences, the parole system, and the changing of the prison into an institution for correction and custody rather than punishment. True enough, more of sentiment than of science is back of these methods, and therefore in many individual instances harmful injustice to society and ultimate harm to the offender against society is wrought. This is inevitable in any period of transition from an erroneous to a more correct method of dealing with social problems. As more harmony of opinion comes to exist among those who have been forced to take up the problem because of a contact gradually growing more intimate, justice to all will come nearer. And it is the psychiatrist, with his collaborator, the psychologist, on whom the responsibility must rest most heavily if the newer ideas of the nature of crime as a disease, of the criminal as a sick man, are to prevail.

There is no longer any credited opposition to the view that criminal offenses, petty or otherwise, are the products of individual and social disease. With the latter aspect of the subject I am not at present concerned. While the influence of environment, for those most charitably inclined, excuses the offender from responsibility for his condition, it does not excuse him from responsibility for his acts. But if every offender is a diseased person, in the psycho-physiologic sense, his responsibility must come into question before the bar of justice.

### QUESTION OF RESPONSIBILITY

Many a medicolegal battle has been fought over this question. The issue has been confused usually because the legal mind has ever thought of consciousness as synonymous with sanity. Because a man knew what he was doing the lawyer has held him responsible. But a man's mental make-up is a very complex thing; it is a bundle of psychic forces and habits which may be summed up in three divisions: intellect (or consciousness); emotion, that is, impulse to act; and will, that is, action itself. No two persons are alike in the strength or weakness of one or the other of these forces. To take the view that consciousness of the wrongfulness or illegality of an act at the time of its committal makes the offender "responsible" for it and legally sane, is inconsistent with the well-founded knowledge of mental functions which we now possess. Conduct is not dependent chiefly on knowledge, but much more on impulse or emotion and a will capable or incapable of controlling and directing impulse in a way to harmonize with knowledge, that is, consciousness.

It is just because of this complexity of function that so many different kinds of crimes are committed and so many different types of criminals exist, and the more or less inadequate classification of criminals that has been attempted by various writers will show when analyzed that consciously or unconsciously the classifiers have characterized the objects of their study according to the mental function most involved in them.

For example, Ferri, a follower of Lombroso, classifies criminals as follows:

1. The criminal by instinct, who is the born criminal.
2. The passional criminal, who commits crime under the influence of passion.
3. The criminal from chance.
4. The criminal from habit.
5. The insane criminal.

In the first group would be placed those who by reason of some inherent defect involving the intellectual and emotional functions are incapable of developing the sense of love, self-sacrifice, pity, honor, altruism or remorse—persons whose standard of right and wrong can never be the same as that of the average member of society in the period in which he lives. These are cases of arrested development in the ethical sphere and represent reversions in this faculty to primitive types.

Illustrations of the brute instinct which we all possess are seen in the class of criminals whose acts are due to passion, becoming, on sufficient provocation, beyond control because of weakness of will in the nature of a deficiency of inhibition power in the nervous system. Now it is known from physiologic investigations that the power of inhibition is a function of certain nerve cells and fibers in the cortex of the cerebrum.

In the case of the criminal from chance we are confronted with a feeble-minded person who is easily made the subject of suggestion because of deficiency of judgment and who responds to the criminal suggestion because of deficiency of inhibition. Persons of this kind are the tools of the more intelligent in crime, are harmless in themselves, and in an environment in which they are safeguarded from temptation they lead normal lives. They are children all of their lives in so far as their faculty of judgment and power of will are concerned.

In the class of habitual criminals are to be found those who by reason of environment, especially early environment, lead criminal careers in response to the association of ideas which their environment has aroused or which has been aroused by psychic shocks during the age prior to that of mature judgment; these shocks have affected the subconscious mind in a way to make it seek relief in periodical reaction, usually of a resentful, retaliative nature. Such a career is for them the path of least resistance. The first crime has relieved the depth of the subconscious mind from tension, and thus aroused in it sufficient pleasure or desire to cause disassociation of emotion from intellect at the time when the opportunity to commit the crime again occurs. Persons of this kind form the class of recidivists or repeaters, and it is noteworthy that prison officials have reported that the subsequent offense of the recidivists is exactly like or similar to the preceding one. Their condition may be compared in a measure to that of the kleptomaniac, in whom, however, there is a much wider disassociation of consciousness and who is more definitely insane. They may also be compared or likened very closely to the hysterical patient as regards the essence of the disorder. Janet shows clearly the nature of the weakness of will and of obsessive ideas and their consequences in this type of mind, for example:

> This feebleness of will and of attention is, in fact, manifested by a second characteristic which seems the inverse of the preceding (suggestibility), and which, nevertheless, is its logical consequence. Just as hystericals are incapable of beginning an action, starting a belief, or a perception, so are they equally incapable of stopping any when once started. To stop an action is to change our general state. It is to adapt ourselves in another manner to a new circumstance. These patients, who understand no change, understand still less such an one, for it is necessary to create a clear and powerful thought in order to stop the automatic development of an old

thought that has become stronger and stronger through repetition. "When I have begun something," we heard a patient say, "I must go on with it; I cannot stop; I would break the windows, kill myself—I am pushed on by my ideas; driven in a way that I cannot resist—I fall into an idea as down a precipice, and the declivity makes it hard to get back again!"[1]

In the definitely insane group of criminals, that is, those having one of the clear-cut psychoses, there are all grades of mental disintegration involving, as in the borderland cases, one or more or all of the functions of mentality. Those most prone to commit statute offenses are the paranoiac, with his disruption of judgment; the epileptic, in whom consciousness is almost entirely split off and who at the time of the act is almost entirely a subconscious automatic personality; the kleptomaniac; the dipsomaniac; other drug habitués, especially the cocain fiend, who may commit violence in reaction to hallucinations. Responsibility for crime committed by persons of this kind can be at once dismissed.

But when there are offenders of the first four classes enumerated to consider, we are brought face to face with the "borderland cases" in psychiatry. These comprise that vast number of unfortunates who are psychopathic, but are rarely committed to hospitals for the insane and are so disposed of only in their episodal periods of excitement or quarrelsomeness. When they recover to their usual level they are again discharged into society no more fit than before to cope with its complexities. Among these are the ones who commit petty offenses for which they are sent to jail, workhouse or reformatories for short terms; after their release they soon are returned because of inability to get along in any environment in which they are not closely subjected to organized discipline. They behave very well in custody, and if kept so for prolonged periods would gradually develop habits of self-control, concentration of mind and industry, which would make them self-supporting in occupations fitted for their capacities. The vagrant, the brawler, the gangster, the prostitute, cadet and the ne'er-do-well all belong to this group. They have been called by several writers "constitutional inferiors,"[2, 3] and this is a correct term to apply to them, if the particular function of mentality in which they are inferior is designated.[4, 5] Otherwise the term is unsatisfactory, for in some of their capacities many of them are found to be exceptionally brilliant, or at least superior to the average, that is, in music, drawing, literature, invention. For these, one writer prefers the term "constitutional abnormality."[6] The sort of offenders just described may be found in any of the first four groups of Ferri's classification, as may those who commit more serious offenses, crimes which are punished by long sentence in the penitentiary or state prison.

All offenders, indeed, may be characterized by one or more of the following attributes:

1. Exaggerated suggestibility.
2. Exaggerated egotism.
3. Emotional instability.
4. A lack of altruistic or unselfish sense.
5. A lack of the power of sustained energy, that is, abnormal nervous fatigue.
6. A tendency to the easy disintegration of consciousness which permits the brutal or inferior qualities of the subconscious mind easily to become dominant when temptation occurs and to be ungoverned by the critical quality of the conscious mind; even when the critical function is sufficiently aroused, the power of direction by the will is in abeyance. Here is again seen the similarity in mental make-up of these persons to that of one afflicted with hysteria.

### THE QUESTION OF SANITY

It is not my purpose to attempt to account for these abnormalities of conduct by theoretical consideration of the pathologic nature of them in so far as brain structure is concerned. Too little is known, too little can be known, of what constitutes complex brain function. But it can be confidently asserted that in every person of the types above considered we are dealing with a mentally abnormal person — therefore not a sane person, but a *diseased person, a sick person*, as well as an *offender* against the laws of the society in which that person lives —laws to which perfectly sane or well persons have no difficulty in conforming.

### TREATMENT OF THE CRIMINAL

If the views just expressed are true to the best of our present knowledge, any method of dealing with the offender which contains an element of punishment is unjust to him and also illogical. It is likewise unjust and illogical from the point of view of the protection of society; for the idea of punishment necessitates fitting the punishment to the crime and not to the criminal. When the allotted punishment is completed, the criminal, unchanged, is set free. Society has the right to protection, the individual the right to justice; but the only real justice for the person who is in error is the attempt to correct the condition which caused him to err.

Does punishment do this? Have crimes decreased in the aggregate or in the individual case because of the customary penalties imposed for them? Statistics do not warrant any such assumption. In the United States from 1885 to 1906, murder and homicide increased from 32 per million inhabitants to 108 per million, while the number of executions in the same period increased from 17 to 76. The number of those in prison for all offenses decreased by 30 per each 100,000 inhabitants during this period. An increase is also shown in less serious offenses.[7] If these statistics mean anything, may they not go to show that the habitual or instinctive criminal is too often set free to repeat his errors and also to influence the unrecognized, potential criminal of the feeble-minded, constitutionally inferior class? It is the instinctive or habitual criminal who often is pardoned for good conduct, because of his ready adaptability to prison life when he knows such an attitude to be for his advantage. In these offenders, however, punishment only arouses a desire for retaliation on society.

What, then, is the remedy? Are we to abolish prisons and penalties and, taking the fatalistic view that all crime is incurable, shut up all offenders in asylums for the remainder of their lives?

Abolishment of punishment is certainly called for and is gradually coming as the prison is changed into a house for correction and custody, into a colony for abnormal people—where they may live as nearly normal a life as is possible for each and every one of them, where their individual characteristics and capacities are studied and their lives arranged accordingly. The same change has

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1. Janet, Pierre: Mental State of Hystericals, Rueff & Co., Paris, 1893.
2. Kraepelin: Psychiatrie, Abel, Leipsic, 1887.
3. Meyer, Adolph: An Attempt at the Analysis of the Neurotic Constitution, Am. Jour. Psychol., 1903, xiv.
4. Wright, H. W.: A Consideration of Constitutional Inferiority, New York Med. Jour., Dec. 26, 1908, p. 7.
5. Karpas, M. J.: Psychic Constitutional Inferiority, New York Med. Jour., March 21, 1913.
6. Oberndorf, C. P.: Constitutional Inferiority and Its Psychosis, The Journal A. M. A., Jan. 27, 1912, p. 249.
7. United States Census, 1910.

already occurred in the methods of dealing with the obviously insane, as may be seen by a visit to the most up-to-date state hospitals. If these methods are worth while in the case of the chronically insane, they are still more so in the treatment of criminal offenders who, though mentally abnormal, are, in the majority of instances, amenable to much greater improvement in habits of thinking, feeling and acting.

But such treatment cannot be accomplished without the supervision and cooperation of the medicopsychologic profession. It is perfectly possible for those who have associated for a long time in a professional capacity with psychopathic persons to determine who is amenable to this, that, or the other form of correction, and to tell when the person is sufficiently corrected in his neuropsychic functions to justify his parole into normal society.

It is also perfectly possible for such trained men to determine who should be kept in permanent custody. It is not possible for those of the legal profession to determine these questions justly unless they also have had the training of the physician and the psychiatrist. Nor is it possible for them to frame just laws as to penalties.

It is not unreasonable, therefore, to foresee the time when the function of the lawyer and the judge will be restricted to the determination of the guilt of the offender and the function of prescribing what is now called the "sentence" or "penalty," but which some day will be called the "therapy" or "treatment," will be taken over by physicians thoroughly trained in mental diseases, who are in the service of the state and consequently free from bias in judgment.

Prison reform must come from within, in response to the conception of crime which scientific study of it as a medicopsychologic problem engenders. Prisons will then become therapeutic schools and colonies controlled by men who know well the sort of material they are dealing with.

These methods and this attitude of mind already prevail in many of our large cities in respect to juvenile offenders. In many juvenile courts a thorough physical and mental examination, including family and developmental history, is made before the judge takes up the case, the offender being detained in a detention home long enough to accomplish the examination. The disposal of the case is likewise influenced almost entirely by the opinion of the medical examiner. If these methods are proper and practicable in dealing with juvenile cases, why are they not also proper for those of a larger growth who are yet children in respect to their development of the moral sense, the will, intellect, self-control, etc.?

Leaving aside the question of the present method of dealing with the major crimes, such as murder, arson, homicide, grand larceny, will any one question the need of reform along the lines suggested in the treatment of minor offenses? Can anything be more ludicrous as well as pitiable than to send the drunk and disorderly, the vagrant, the prostitute and the feeble-minded who have fallen into bad company to the jail or workhouse for a few months, there to find associations and influences worse than they have ever before been in contact with, and then to turn them loose to vent their pent-up feelings in a way which is only a natural response to the lower instincts which such treatment has stimulated!

Let us hope that the day is not far distant when all criminal offenders, "petty" or otherwise, will be looked on in the spirit of compassion, in the light of scientific insight, and their offenses considered symptoms of psychic disease.

Bellevue Hospital.

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# THE ETIOLOGY AND VACCINE TREATMENT OF HODGKIN'S DISEASE

## PRELIMINARY NOTE *

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AND
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This note is published at this time as a confirmation of the findings in Hodgkin's disease of Bunting and Yates,[1] and Negri and Mieremet,[2] and to call attention to the apparently marked benefit following injections of the heat-killed organisms found in the lymph-nodes.

A Gram-staining, non-acid-fast, polymorphous diphtheroid bacillus corresponding to the one found by Fränkel and Much[3] in smears, and cultivated successfully by Bunting and Yates and Negri and Mieremet has now been isolated from the lymph-nodes in twelve cases of Hodgkin's disease. It was obtained in pure culture in only three cases, while in the rest it appeared in conjunction with a staphylococcus. Whenever possible, a portion or all of two lymph-nodes were removed, one from the group involved the longest (usually the cervical region), and one from the group most recently involved (usually the inguinal region). In addition to planting small pieces of the lymph-node, emulsions in salt solution were prepared by grinding in a sterile motor in sterilized air, and planting the emulsion on blood-agar, blood-serum slants (aerobically and anaerobically) and into ascites-dextrose agar. The latter method has the advantage of yielding earlier and more uniformly positive results. By this method the minimum number of viable organisms and a relative proportion of those present has also been determined. In this way it has been found that the lymph-nodes involved the longest in a given case or those from cases of long standing showed more organisms and a relatively larger proportion of staphylococci, while the more recently involved lymph-nodes or those from the cases of shorter duration showed fewer organisms, but a relatively larger proportion of bacilli.

The marked pleomorphic character of this organism as pointed out by Bunting and Yates has also been noted by us. It has happened repeatedly that single colonies in the dextrose-agar, which showed bacilli only in smears, yielded in subcultures a pure culture of staphylococci aerobically, and forms of the bacillus either pure or in mixture anaerobically on the same medium. These facts suggest strongly that the associated staphylococcus is derived from the bacillus.

The vaccines are prepared by growing the organism isolated on the surface of Loeffler's blood-serum, ascites-dextrose-agar or blood-agar slants for from twenty-four to forty-eight hours. A suspension in salt solution is made, the clumps broken up as much as possible, and thrown down by fractional centrifugation. This clump-free emulsion is now standardized and heated to 60 C. (140 F.) for thirty minutes or one hour. Aerobic and anaerobic cultures are made on Loeffler's blood-serum, and these are incubated at least three days before the vaccines are used, to insure the sterility. Then phenol

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[1] Bunting, C. H., and Yates, J. L.: Cultural Results in Hodgkin's Disease, Arch. Int. Med., August, 1913, p. 236; An Etiologic Study of Hodgkin's Disease, Journal A. M. A., Nov. 15, 1913, p. 1803.

[2] Negri and Mieremet: Centralbl. f. Bakteriol., orig., 1913, lxviii, 292.

[3] Fränkel and Much: Ztschr. f. Hyg., 1910, lxvii, 159.

(carbolic acid), 0.5 per cent., is added, and the treated killed suspensions are placed in the ice-chest for use. Whenever staphylococci were found, an attempt was made to have the vaccine contain the bacilli and cocci in about the proportion found in the lymph-nodes. It is obvious, therefore, that an autogenous vaccine is to be preferred, although good results have been obtained with a vaccine prepared from a series of strains isolated from different cases.

All of the patients presented lymphocytomas, all showed involvement of the cervical lymph-nodes, the majority had enlargement of the axillary lymph-nodes; the inguinal lymph-nodes were moderately enlarged in all of the patients; in four the mediastinal lymph-nodes were so large as to cause respiratory and cardiac embarrassment, with anasarca in two and pleural effusion in two patients. The spleen was palpably enlarged in ten and very large in five of these.

Histologic examination was made of the lymph-nodes of all the patients. The majority may be classed as the endothelioid type (Reed, Longcope, McCallum and others). One was classed histologically as lymphosarcoma and the remainder as simple lymphoma or lymphadenoma. The one patient with the histologic diagnosis of lymphosarcoma did not present clinical evidence of malignancy by general debility, anemia or recognizable metastases. As stated, the diphtheroid bacillus of Bunting and Yates was isolated from the lymph-nodes of all these patients irrespective of the varying histology of the lymph-nodes.

The blood-picture varied with the physical condition, length of illness and the absence or presence of fever. When present, the anemia was of the secondary type. Moderate leukopenia with relative increase of the small mononuclear cells was noted in some of the afebrile patients. Leukocytosis with the usual leukocytic formula occurred in most of the febrile patients. Four patients were febrile at periods. The temperature curve was of the remittent type. Seven patients were treated for long or short periods at the Presbyterian Hospital, Chicago, and were kept at rest. Five were under the care of physicians at home. Roentgenotherapy three times per week was applied to six patients at the hospital and was used with three of the patients under the management of others. Autogenous vaccine was used in all but one patient, who received the vaccine prepared from other patients. The vaccine was first given in the dose of from 5 to 10 millions and gradually increased to a maximum of 100 millions. The vaccine was given subcutaneously and repeated every five to seven days. We have not used it intravenously, but have considered that method of application in obstinate and extreme conditions. In febrile patients the second or third dose has been associated with a reaction consisting of an increase of temperature (in one patient to 107 F.), rapid pulse and general weakness and discomfort. In non-febrile patients only slight general reaction may occur with a rise of 1 or 2 degrees of temperature, slight general muscular aching and debility. But slight local reaction at point of injection occurs.

In six of our hospital patients there was a uniform and relatively rapid decrease in the size of the lymph-nodes—one of these without Roentgen treatment. One patient treated out of the hospital without roentgenotherapy, with very large lymph-nodes, big spleen and febrile, had a violent general reaction with the third vaccination, then became afebrile and the swellings of the lymph-nodes and splenomegaly rapidly diminished. After five vaccinations, this patient passed from our control and observation. Reports from physicians on two of the series show favorable progress with gradual diminution of the tumors of the lymph-nodes and improvement in a general way. One of these patients receives Roentgen treatment also; the other vaccines only. Two of the patients are dead. One with rather rapid enlargement of the mediastinal lymph-nodes died soon after the third vaccination, from the result of mediastinal pressure. This patient was managed at his own home by the family physician and the final clinical details are unknown to us. One patient with enlarged mediastinal lymph-nodes suffered for a year with respiratory and cardiac embarrassment. Right pleural effusion required frequent tapping. Under other care he received roentgenotherapy. A short period before death we isolated the micro-organism from lymph-nodes of the neck and groin and from lymphoid tissue removed from the nasopharynx. The patient died from the result of mediastinal pressure after only one autogenous vaccination.

Of patients under our continued observation one is apparently well. There are no palpably enlarged lymph-nodes; the much enlarged spleen is no longer palpable; the blood-picture is normal; his weight and strength are normal. One patient who suffered from much enlarged mediastinal lymph-nodes and consequent dyspnea, anasarca and great debility was very much improved with diminution of the size of all involved lymph-nodes, gained in weight and was subjectively comfortable, and has had the vaccines and Roentgen treatment every week since June. In October a remittent type of fever developed with gradually increasing anemia of the secondary type, a leukocytosis of about 18,000, with 80 per cent. of polynuclear cells. There was no increase in size of lymph-nodes. On November 24 she returned to the hospital. With rest in bed with vaccines, roentgenotherapy and good food there is again rapid general improvement. The other patients are improving with varying degrees of rapidity.

This preliminary note is presented with the hope that the clinical study may be carried on by others. We hope to present a more detailed report of these and other patients with protocols, definite histology of the lymph-nodes, blood-pictures, immunologic studies of the blood, etc. Finally, we have used Roentgen treatment coincidently with the vaccines, because we believe we were not justified in depriving the patients of any and all sources of help, even if by so doing we deviated from the narrow and definite path of scientific research. If it be finally proved that this micro-organism isolated from the lymph-nodes is the cause of the clinical entity called Hodgkin's disease, the use of the specific vaccines without roentgenotherapy may then be justified.

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**Hydrochloric Acid and the Administration of Acids or Alkalies.**—T. Gillman Moorhead (*Dublin Jour. Med. Sc.*, Oct. 1, 1913) says that the presence of HCl in diminished or increased quantity is no definite guide to the administration of acids or alkalies, respectively, and that in treatment the stomach cannot always be expected to respond in a manner similar to the reactions in the test-tube. In some cases treatment along definite chemical lines is useful, as in hypochlorhydria, in which tonics and acids are beneficial, but in these cases also alkalies administered some time after a meal are more symptomatically useful by neutralizing the organic acids present on account of abnormal fermentation. In hyperacidity due to HCl, the removal of the cause, such as excessive smoking, excessive drinking, or excessive nerve strain, is much more useful than alkaline treatment.

# ETIOLOGY OF ARTIFICIAL FEEDING

## A PLEA FOR THE STUDY OF BREAST-MILK PROBLEMS *

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The title of my paper expresses the desire that prompts its presentation—a wish to discuss, from actual clinical experience and from general observation, the reasons that lead up to a discontinuance of breast-feeding and which, therefore, bring about the institution of artificial feeding, and to prove that these reasons are usually fallacious. I shall not deal in statistics or cite classified groups of cases, but simply present the impressions which I have gained while following a clinical experience culled from private practice and from a comparatively large hospital clientele. The type of patients considered embraces a mixture of all classes, from the poverty-stricken alien who has but recently come to our shores to the infant of the rich surrounded with every luxury that the best city or suburban home can afford. The question is asked of every mother who presents an artificially reared babe or one on whom artificial rearing is being attempted, "Why did you take your baby from the breast?" In each instance—it matters not what the social status may be—the answer may be classified under one of three roughly made headings: (1) psychic, (2) educational, (3) economic or social. The divisions are not always distinctly separated, as a given reason may be embraced by one or more headings.

### PSYCHIC REASONS FOR DISCONTINUING BREAST-FEEDING

The psychic reasons may as a rule be referred to the maternal mental state at the time. How is this produced? The breast-feeding is usually discontinued through an innate fear either of not being able successfully to accomplish the act of nursing through not knowing how to go about it or through a fear that the product of the mammary gland is sufficient neither in quantity nor in quality to supply the nutritional demands of the infant. Either state is induced by a failure of the mother to recognize the possibilities of her own organism or through an instinct of unfounded anxiety for the welfare of her offspring. The reverse—a rare manifestation of innate selfishness—may be operative. In either of the two former instances the psychosis, if it may be so called, usually has no foundation in fact, or the temporary cessation of the lacteal flow is directly inhibited by the fear on which it depends. This inhibition of secretion finds its analogue in an identical effect on other secretions, notably that of the saliva, when the same etiologic factor, fear, is in evidence. Unfortunately, as will be pointed out later, the profession, by a tacit acquiescence in the probability of the actual disability or, in many instances, by actual encouragement in the idea, is often to blame, if not for the beginning of the trouble, at least for its continuance.

Here the physician loses a golden opportunity of becoming a legitimate psychotherapeutist and, by the same exhibition of indifference or of actual carelessness in other psychasthenic states, permits the irresponsible exponents of questionable systems of mental therapy to succeed where he fails. It is my experience that this element of fear of not being able to accomplish the nursing function successfully is one of the most important factors in the discontinuance of breast-feeding, and I wish here to subscribe to the opinion that rarely, if ever, other things being equal, in an otherwise healthy woman, can a permanent organic, irremovable obstacle to successful maternal nursing be demonstrated.

"I did not nurse my baby because I could not." "My milk poisoned my last baby and it died." Parenthetically, it may be stated that it was not the mother's milk that poisoned the baby, but in all probability the indifferent artificial feeding on which it was placed when the breast was unnecessarily withdrawn. "I never can nurse my babies because my milk dries up." These and similar replies are given to our queries as to why the breast-feeding was discontinued, and not one of them will stand the test of careful scrutiny or of future experience in a birth that is intelligently managed. Repeatedly in physicians' families have I seen instances in which I have been summoned, two or three months after unsuccessful artificial nourishment had been attempted to rear an infant because this element of fear had caused the breast-feeding to be discontinued; while in subsequent deliveries in which the care of the breasts had been placed in my hands and the mother had been properly fed and encouraged and morally supported and all external interfering sources had been excluded, a period of successful nursing has ensued which lasted nine or twelve months and could have continued longer had I so wished. Who among you has not had a similar experience?

The fear that the breast-milk is not the proper food for the infant often depends on the development of the signs of early indigestion—vomiting and green-curded stools, and a failure to gain immediately in weight. This will be referred to again, as it involves the physician's responsibility. Suffice it to say that green stools and vomiting do not constitute a bar to successful nursing, although I have found them to be among the most common causes that put to flight the physician in his half-hearted attempts to conserve the breast to the infant.

Among the better element a pretense of willingness to nurse is often made while at the same time every possible excuse is seized on by the mother in an effort to demonstrate her inability. The exigencies of social life, an inordinate love of pleasure, the confession of utter ignorance and helplessness, a desire to escape the obligations of maternity and to shift them on others, a cowardly exhibition of hysteria or assumed physical weakness underlie the plea for assistance. I know no class of patients more difficult to handle; I know no more disheartening task than to convince such mothers of their error. They must be handled diplomatically, yet withal sternly, the conscientious physician refusing to be ruled by them or to acknowledge the incorrectness of his position. One must appeal to their moral sense, the duty which they owe to their offspring, and point out to them the uncertainties and dangers of artificial feeding. The climax usually comes by the mother seeking advice from one of a more conciliatory mold. Few will yield when once they have determined to seek the services of the bottle until perhaps it is too late—in the presence of a fatal diarrhea, convulsions or pneumonia.

### EDUCATIONAL REASONS

The reasons given that may be classified as coming under educational deficiency call into account both the physician's and the mother's responsibility. Infant-feeding, in spite of the so-called advances made in the science, is neither properly taught in medical schools,

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

nor is it properly presented in most of the text-books, or practiced, as taught, by the leading dietitians in their hospitals or in private practice. I do not imply that the text-books fail to present the subject of artificial feeding thoroughly. On the contrary, the authors' attempts at comprehensiveness befog the issue. Too many views, too many theories and too many methods are still being taught. Students and practitioners when through perusing this or that authoritative work, or all of them, are left without the ability to apply practically what they have read. I was amazed recently when visiting the wards of one of the largest institutions of a certain city to find that the feeding cases were left by a distinguished chief in the hands of an inexperienced intern, who in his turn depended on a nurse of less experience. Stock mixtures, carelessly compounded, were fed. All the babies were doing badly. Answers to pertinent questions were evasive. Knowledge of metabolism, digestion and of the adaptability of the mixtures to the individuals was lacking. The wonder is, not that the average physician still refuses to be impressed with the value of scientific feeding, but that he ever attempts to follow out any case to its logical conclusion.

If this be true of artificial feeding, what may be said of the teaching and practice of breast-feeding? It is almost nil. The student and practitioner receive but little information as to how to interpret or to meet the signs of early indigestion, as to what are the best means of conserving the milk-supply and how to meet the problems of nutrition as they occur in the breast-fed. Authoritative opinion satisfies itself by stating that the best way to rear an infant is on the breast and, after demonstrating that the great yearly infant mortality depends largely on conditions attributable to artificial feeding, proceeds, without further comment on breast-feeding, to elaborate page after page of instruction on that means of feeding on which the greatest mortality depends. The paradox is real, since the conservation of human milk may be successfully practiced.

A breast-fed infant has colic: it is constipated or has diarrhea; it vomits; its stools are green and contain mucus and curds. None of these constitutes a bar to successful breast-feeding. With reference to vomiting itself I wish to state that, though it need rarely be so, it is one of the most common causes for withdrawing the breast. In all I have treated eight cases of pyloric obstruction, and in each instance maternal nursing had been discontinued because of the symptom—vomiting—the diagnosis of obstruction not having been considered. A little care and use of the ordinary methods of physical diagnosis would have determined that the cause of the vomiting depended not on the mother's milk, but on an organic stomach affection.

On the other hand, vomiting dependent on faulty milk, as an excess of fat, or on overfeeding or too frequent feedings, does not constitute a valid contra-indication to the use of the breast. Dietetic, eliminative and mechanical treatment of the mother and the institution of common-sense hygienic measures will speedily correct the error.

An infant cries a great deal; it does not seem to get enough milk; it is said to be hungry after nursing; it does not gain in weight rapidly enough; the milk is too thin or too rich, scanty, or entirely absent. Only once in a healthy woman, in a case seen with Dr. Victor A. Loeb, have I met a real instance of an entire absence of milk.

"The mother is too nervous or too irritable." "She is too weak." "All her strength goes into the milk." These and many similar statements are made by the mother, or her friends, or the physician, or all, as an excuse to abandon the breast entirely or to institute partial artificial feeding. Just as vomiting and indigestion rarely constitute a valid reason, so too it may be demonstrated, though time and space forbid detailed consideration of each supposed contra-indication, that none of the many reasons stated are really legitimate bars to maternal feeding.

Abscess of the breast need not, in my experience, in every case indicate complete withdrawal of the breast. The size, location, duration and whether or not pus is secreted at the nipple are the determining factors. If, then, it can be proved that the statement with reference to these supposed contra-indications be true, where does the responsibility lie? What may be done to offset the pernicious tendency to credit these really trivial reasons with such great etiologic influence? Physicians must be educated first to recognize the possibilities of the breast, and they in turn must educate the mothers. The specialist must set the example for the practitioner. Instead of espousing this one's or that one's method of artificial feeding, let him see to it that he is known as an actual and practical advocate of breast-feeding. Let him refuse to place an infant on the bottle just because it is brought to him for this purpose, unless he is presented with a sound reason and one not founded on fear or fancy. Let him, by actual weighing experiments before and after each feeding, satisfy himself as to whether or not the infant is receiving sufficient food. He should consider the weight of the infant at birth, its present weight and its average gain before he determines the nourishment to be unfit. If it be found so, let him make an honest endeavor to rehabilitate the lacteal flow before confessing failure. The need for systematic propaganda is urgent, and to be given authoritative weight it should emanate from the Section on the Diseases of Children of the American Medical Association. We should cease arguing about percentages and calories, the etiologic importance of protein, fat and sugar, the rôle that bacteria play, nitrogen intake and ammonium output, the effect of calcium and potassium salts, the two-hour interval, or the four-hour interval, spasmophilia and the exudative diathesis. Let us cease teaching something to-day and decrying it to-morrow, but let us unitedly declare to the profession and to the motherhood of America that the only correct way to feed infants is on the breast, and then let us teach them how to do it.

The artificial feeding of infants has engaged some of the brightest minds of the profession. From the first attempts of Meigs and Pepper in America to adapt cow's milk to the digestive apparatus of the human infant down to the present day illustrious students, Jacobi, Rotch, Holt, Chapin, Finkelstein, Meyer, Keller, Czerny, Heubner, Rubner and others, besides a host of diligent laboratory workers, the trend of investigation has been along lines leading toward the solution of this problem. In spite of years of effort it has been but partially solved. Some uniform rules of feeding may have been enunciated, but no one food, or one method or one system of feeding has been determined as universally adaptable to the human infant. Have the years spent in patient toil and profound study been for naught? This query may be answered negatively if the profession realizes that it has not solved artificial feeding, and positively if it is not conscious of its failure and at the same time that it has not utilized the advantages of breast-milk feeding. Could one-tenth of the time and study devoted to the investigation of artificial feeding have been diverted toward the consideration of the conservation of human milk and of the causes which lead to its disuse and of the means of treating and meeting the gastro-intestinal and nutritional disorders of the breast-fed, infant mortality would have speedily and materially dwindled. The efficiency of breast-milk as a prophylactic against acute infectious diseases, rickets and scurvy, and its therapeutic value in many instances in combating a fatal issue, is well recognized but too seldom utilized. In private practice the incidence of an acute infectious disease is almost invariably the signal to discontinue breast-feeding. The mother is actuated by fear. The physician displays a lack of knowledge in conducting the feedings during the interim. Here is a case in point:

Case 1.—An infant of 3 months with an acute empyema was admitted to the Philadelphia General Hospital. Bulging and redness appeared between the ribs. The empyema ruptured and the opening was enlarged and drainage instituted. After recovery, measles and, later, pneumonia of the opposite side developed, and still later the infant had convulsions. The treatment consisted alone of continuous breast-feeding and ordinary hygienic measures. No drug therapy was employed, and recovery was complete. To-day the baby is a fat, rosy specimen, with but the scar of the empyema remaining.

It would not have taken a great stretch of the imagination to prognosticate the fate of a poorly nourished, anemic, rachitic, indifferently artificially fed infant of this tender age under like circumstances. Breast-milk saved this baby's life and it will do likewise for others. We know well the effect of wet-nursing in many cases of decomposition( marasmus), which cannot be made to gain. The point is not that we do not possess the necessary knowledge—not that the case cited presents anything new—but that we fail, in our zeal to delve deeper into new methods of artificial feeding, to realize the treasure we possess in breast-milk, or, granted we do, we fail to put our knowledge to use. We are as

> one whose hand,
> Like the base Indian, threw a pearl away,
> Richer than all his tribe.

The indifference with which physicians sacrifice the human breast is nothing short of shocking, especially since they possess nothing quite so good to offer. Even to-day the woful lack of knowledge possessed by many practitioners as to how to adjust cow's milk to the needs of the individual is appalling. The cynical manner in which they regard the whole subject of scientific artificial feeding is disheartening. They are the chief offenders. They usually have many poor persons who seek their advice. It is among this class that the ravages of mortality are the greatest. It is these physicians we should reach. They are in need of propaganda which will educate them in the methods of breast-milk conservation.

According to my observations, maternal illness need not constitute a valid permanent contra-indication to breast-feeding in the majority of cases in which it is practiced. This has special reference to slight indispositions, colds, mild infections and minor operations. The ease with which the breast-milk may be rehabilitated can be witnessed daily, after a cessation of many days and even weeks. A wet-nurse was discharged from a case. The infant exhibited an idiosyncrasy to cow's milk. Persistent efforts were made for three weeks with the bottle. Rashes and gastro-intestinal symptoms developed (allergy). The wet-nurse was recalled. Her milk was found to be scanty and poor. Under forced feeding, general hygiene and the stimulus given to the mammary gland by the infant's lips, the fluid was reestablished to overflowing and reached a percentage of fat above 7 per cent., and measures had to be taken to reduce both quantity and quality. Eclampsia, nephritis, grave anemia, malignant disease, tuberculosis, certain forms of cardiac disease, pregnancy, epilepsy, insanity and prolonged infections are the type of illnesses which contra-indicate nursing.

The obstetrician, too, must assume his share of the responsibility in this war of conservation. He must be a breast-feeder enthusiast and should be capable, without the advice of the pediatrist, of handling the problem for at least the two or three weeks of his attendance. Beside his indifference to features other than those directly connected with the accouchement (care of the breasts, inquiry as to the condition of the nipples and the character of the milk, etc.), the greatest error into which he falls is to allow his patient to get out of bed too soon. This is usually followed by bleeding, which is deleterious to the quantity and quality of the milk. One obstetrician of my acquaintance is accustomed to give his patients a dose of Epsom salt daily after the third day. The result is that nearly all of his patients have bottle babies. This case illustrates what may be accomplished:

Case 2.—One of his patients, the wife of a physician, had received a dose of Epsom salt daily for two weeks. Her milk was practically gone. She was anemic and undernourished, as was the infant at the age of 7 weeks. It was on the bottle in midsummer. The parents were much alarmed, as their first baby had died of intoxication (Finkelstein). Forced feeding, sensible hygiene and a tremendous amount of moral support rehabilitated the milk-flow and carried the infant through the summer and far into the winter with exceptionally satisfactory results.

### ECONOMIC REASONS AGAINST BREAST-FEEDING

Reasons for stopping breast-feeding, at once pathetic and difficult to overcome, are those which may be classified as economic or sociologic. No one denies that the poor and ignorant are in need of instruction in hygiene and general physical care. It may be pertinently asked, however, whether or not such instruction brings about desired results. Those who come into daily contact with disease the result of poverty, and endeavor to inject personality into their work and aspire to be more than medical men and to make their hospitals and institutions educational forces, often realize how hopelessly useless is the task. We are reminded of a saying accredited to Henry Ward Beecher that the most potent factor in the reformation of a hungry man is a sandwich. So these mothers, who are poorly housed and poorly fed, who must labor either within the home or outside of it, are best benefited by that advice which comes as actual material assistance to relieve, in part at least, their physical responsibilities.

On whom does the onus rest? On society itself and its representatives—the legislature. Free milk-stations, floating hospitals, clean milk and many other endeavors, providing what appear as luxuries to the poor, but which, as ordinary necessities, are secured, as if by divine right, or at least without the influence of visible external agencies, by those better situated, represent a well-intentioned but misdirected expenditure of thousands annually by the state and charitable organizations. Under our present social system, however, the necessity seems to exist. What else, other than charity, have we to offer to the mother who answers our demand that she nurse her babe by affirming that she must go to work; that she has not enough food to provide the ordinary fare, without considering the extra quart of milk which she must consume; that she must place her babe in a home or in a day nursery. Recently in Pennsylvania an act has been passed pensioning indigent mothers instead of separating them from their children by placing the latter in public institutions. While accomplishing some good its effect cannot be far-reaching, since it is practically a form of charity, itself a result of perverted social conditions and by its nature necessarily limited in its scope.

Further, it may be pertinently queried whether or not the permanent necessity for charity exists, and who is to determine who shall receive charity and who is to dispense it. In other words, why do poverty and its companion, ignorance, exist? Is it not possible that the error lies at the foundation of our social system, which denies to the worker his rightful share of that which his brawn has built, and gives the lion's share to the brain which conceives or directs? As a consequence his opportunities for education and self-uplift are limited. Does not charity simply represent a return by the individual or by the state of that which originally should have been given to the beneficiary as a product of his labor? If this be so, does it not appear patent that the necessity for charity not only does not exist, but that it is not humane and that, as before stated, it is makeshift and a blight on the state which encourages it?

One may ask, in what manner does this influence infant mortality in general and the problem of breast-feeding in particular? Its effect is potent largely for the reasons enumerated and because it hinders the independence of the nursing mother. It is recognized that however desirable an economic revolution which would benefit this class may be, its fruition and practical realization are not only problematic, but also far remote. The innate selfishness of human nature, the self-love, the exaggerated ego from which we all suffer, will indefinitely postpone the millennium of equal opportunity to partake of the natural resources of the earth and of the common well of knowledge. One fact stands out clearly, and that is that the nursing mother is performing for the state a duty not only as real but far more important than the artisan who is legally employed to build its bridges or to construct its highways. Why deny compensation to the one and not to the other? Let that mother who is devoting from nine months to one year of her time to the rearing of a future citizen of the commonwealth be relieved of material responsibility and be paid in actual cash for her services. This need not be regarded as chimerical but could, I believe, be put into practical operation and would redound to the good of the nation and would be a far more sensible expenditure of the public funds and certainly more humane than doled-out charity. Before legislators could be prevailed on to lend their influence to such a proposition the motherhood of the country and the profession are in urgent need of illuminating propaganda which would emphasize the advantages and possibilities of breast-nursing, the dangers and often the lack of the necessity for artificial feeding and the tremendous influence of the latter in maintaining the high-water mark of infant mortality. The burden of such a campaign of education is on that portion of the medical profession which is presumed to speak with authority on the matter of childen's diseases. I have appended the case histories briefly of a few of my personal experiences. They could be almost innumerably multiplied. Some appear commonplace and trite, but they teach a powerful lesson of the importance of breast-milk conservation. Each case lost to the breast adds its mite in influencing the sum total of the tremendous infant morbidity and infant mortality.

Case 3.—Mrs. J., mother of four children, and healthy, refused to nurse because she said that her milk poisoned her last baby, causing its death. The present infant was immediately placed on artificial nourishment and finally passed through its first year after experiencing two severe attacks of spasms and one attack of severe digestive disturbance. This could have been avoided by breast-feeding.

Case 4.—Mrs. M. had two children, both artificially fed. Both developed summer complaint and marasmus during the course of feeding, but finally recovered. The husband was a physician. The mother was told without reason that her milk was all water. She became pregnant again. From the day of conception, she was encouraged with reference to her ability to nurse her babe. After delivery intensity of moral support increased and she was well fed. Result: abundant milk-supply for ten months, and a healthy infant.

Case 5.—Baby S., first baby, father a physician. Weight at birth 6½ pounds. Vomited every feeding. Bowels green and curded; anus excoriated. Mother very nervous. Diagnosis of probable pyloric obstruction made and advisability of weaning was being considered. Mother reassured. Pyloric obstruction eliminated. Milk contained high fat percentage. Mother dieted and purged. Told to ignore digestive symptoms. Small dose of strontium bromid and a little water administered before feeding. Baby continued to gain in spite of digestive symptoms, which gradually subsided. Present weight at six weeks, 10 pounds. Usual course in this case would have been to wean, with probable disaster on account of the approach of summer.

Case 6.—Baby G., first infant. Mother well. Father a physician. Infant cried a great deal. Mother therefore convinced that she did not have enough milk and infant was starving. Very difficult to control. Finally *convinced* by actual weighing experiments before and after feeding and the progressive gain in weight.

Case 7.—Baby L., father a physician. Had lost one infant from summer-complaint on bottle. Mother during puerperium had received an ounce of Epsom salt a day and besides had inverted nipples and small breasts. Rose from childbed weak, anemic and with flabby breasts. Flow appeared about to be leaving. Regular nursing advised, forced feeding, with *oatmeal* and Southworth's soup.[1] Return of flow was gradual and the gain in weight tedious. I refused to wean on account of summer. Mother very nervous. Both parents, against their better judgment, frequently threatened to give artificial food. Flow finally established. Result: a fat, healthy babe.

Case 8.—Mrs. W., mother of two children. Very stout. Breast well developed, but not so much glandular substance. Confined with present baby in hospital. Permitted to get up on ninth day and to leave hospital on tenth day. Result: severe uterine hemorrhage. Rest in bed and forced feeding only partially restored flow of milk. Finally had to wean in summer. Result: severe intestinal disturbances. Final recovery. Remarks: Fault lay with the accoucheur. All trouble could have been avoided.

Thus, in a general way an attempt has been made to state the influences at work which have been responsible for the decadence of the habit of breast-feeding, and it would seem from my experience that the following conclusions are justifiable:

## CONCLUSIONS

1. Breast-feeding is the only sane and safe method of infant-feeding.

2. The breast is too frequently sacrificed without cause.

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[1] Southworth's soup consists of 2 tablespoonfuls of yellow corn-meal boiled one-half hour with 1 quart of water. Water of evaporation is made up by addition of hot water. Whole is salted and flavored to taste. About 1 quart a day is drunk.

3. Psychic influences are largely determinable so far as the mother is concerned.

4. Fear plays an important rôle in the etiology of artificial feeding.

5. The two most common examples of fear depend on the mother's belief in her inability to provide suitable nourishment and on the signs of early indigestion which are erroneously regarded as a contra-indication to the continuance of breast-feeding.

6. The profession of the country has not been sufficiently educated in the methods of dealing with nutritional and digestive disturbances of the breast-fed.

7. Medical curriculums are lacking in such instruction.

8. Too much time has been spent in studying the problems of artificial nourishment without very much progress or benefit.

9. Physicians resort too quickly to artificial feeding.

10. Economic and social reasons for discontinuing the breast are the most difficult to overcome and find their origin in the present social system.

11. Charity is but a makeshift to relieve the present state of error. It is unnecessary and not humane.

12. A mutation of economic and social conditions, while offering relief, is remote.

13. In the interim nursing mothers should receive actual cash compensation from the state.

14. A campaign of education directed toward legislators, mothers and physicians is urgently needed and should be undertaken by the Section on Diseases of Children of the American Medical Association and the pediatric sections of allied organizations.

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## ABSTRACT OF DISCUSSION

Dr. John Zahorsky, St. Louis: Most writers on the subject seem to agree that there are few mothers who are unable to nurse their babies. As an actual fact, I have great difficulty in private practice in keeping many babies on the breast, and I do not think that we can be as optimistic as Dr. Lowenburg that we can do this. I am excluding now any mother who has not enough to eat. I mean mothers of the better class who can pay for the best food and the best care. Many of them cannot nurse their babies in spite of all the psychotherapy that I can give and all the feeding methods that I can devise. The usual symptoms are acute indigestion and the baby does not thrive. The mother nurses the baby according to the ordinary rule. Nevertheless the baby does not thrive; it has severe dyspeptic symptoms that are not improved by lengthening the interval between feedings. What shall we do with these babies? They are very numerous. I have not been successful with these cases, and do not know anyone who has. I am collecting records of a large number of these cases which I hope some time to present. These babies are usually fed by supplemental or complemental feedings, and the mother soon finds that the baby does better, likes the artificial food better than the breast, and then she gives it more in spite of the doctor's advice. Why the mother's milk does not agree with the child we do not know.

When a mother asks my advice about putting her baby on the bottle, I say to her, "If you were going to have an operation performed on your baby in which there was a mortality of from 10 to 15 per cent. would you not consult several physicians before having to undergo the operation?" I then suggest that she consult two or three physicians before putting the baby on the bottle, since this has an equal mortality with an operation. We generally succeed in keeping these mothers from weaning the babies, but that does not always mean that the babies are fed.

Dr. C. F. Wahrer, Fort Madison, Iowa: I do not believe that a certain class of Dr. Zahorsky's patients come under Dr. Lowenburg's classification. I want to make a plea for those mothers who want to nurse their babies and can do it, but for some reason have been ignorantly advised. Within the last six months I confined two sisters about three and a half months apart. They both had a "Sary Gamp" for a nurse. She told the first sister that she could not nurse her baby because the milk was too thin. A few days after my last attendance the husband came to me and said the wife's breasts were hard and large. I said, "Have you been removing the milk?" He said, "Yes," I said, "What did you do with the milk?" He said, "Threw it away." I said, "What do you feed the baby on?" He said, "The bottle." Now in such a case the doctor must make his moral influence felt. I told him that they must feed this baby on its mother's milk or do without my services. If patients want to follow the advice of "Sary Gamp," who maintains that she has raised thirteen children and for that reason should give advice (although she has lost seven of them), they can do without my services. I told this nurse that she must not interfere any more or I would show her the door.

The same thing occurred when the second sister was confined. They also had "Sary Gamp." I told the mother that if she did not nurse the baby I would not come to the house again. Both these mothers are nursing their babies and are happy.

Dr. H. D. Chapin, New York: There seems to be some difference of opinion. There are some women who do wish to nurse their babies, but are physically unable to do so, although they are willing to follow all the directions that are given them.

Dr. H. W. Francis, Bancroft, Neb.: I live in a small town. I seldom have trouble in getting the mothers to nurse their babies. Occasionally we have a mother whose milk does not seem to agree with the baby. In my experience, the continued use of sodium citrate given to the baby at nursing time is often beneficial. I have continued this as long as three months without any harmful effect and it proves of benefit to the baby. It stops the colicky spells.

Dr. L. R. DeBuys, New Orleans: There is one thing that Dr. Lowenburg may have forgotten to mention which I think should be emphasized, namely, the care of the breast and the care of the nipples before confinement. It is absolutely essential. I recently saw a mother who was extremely anxious to nurse her baby. The baby was 11 days old. It was torture for her to try to nurse him, her nipples were so fissured. In a few days under the proper management the nipples were healed and she resumed nursing her baby without any pain or inconvenience. It is essential to have good nipples in order to have mental rest and effectual encouragement.

We meet two classes of mothers, those who want to nurse their babies and cannot, and those who do not want to and can. In the case of the latter I think that we are perfectly right in taking the position that Dr. Wahrer has taken. In those cases in which the mother wants to nurse her baby and cannot, my practice has been, if she is supplying a little milk which is not causing any digestive disturbance, to weigh the baby before and after nursing to determine what the baby is getting and make complemental feedings to meet the requirements. I have frequently found that the mother can nurse the baby for six or seven months in this way.

In an instance in which the mother was giving 4 ounces in twenty-four hours, by this method, in the course of three months she was giving 20 ounces of milk; the baby, of course, was having complemental feedings. Incidentally, the mothers in these cases were in good circumstances.

There is a tendency to wean the baby if the stools are not perfect, that is, are not normal custard stools. We must remember, in this connection, that it takes some weeks, two or three, sometimes a month, for the baby to become adapted to the breast and the breast to the baby.

I have had a rather unique experience in connection with an abscess of the breast. The breast had to be operated on. I allowed the baby to continue to nurse the healthy breast; and during the period when the diseased breast was being treated surgically I used puppies to nurse it, and in this way kept the breast functionating. After the breast had entirely healed and there were no organisms in the milk, the baby was put back to that breast, which continued to functionate satisfactorily.

Dr. Collins H. Johnston, Grand Rapids, Mich.: I have not found many mothers who do not wish to nurse their babies. Many mothers have not been taught that the mortality of bottle-fed babies is eight or ten times that of breast-fed babies. In my lectures to nurses I always emphasize the fact that there are but two contra-indications on the mother's part to nursing a baby. One is advanced heart disease, the other pulmonary tuberculosis. There are, of course, other occasional conditions in which we may, if necessary, advise weaning, but these two classifications will cover the great majority of cases.

I think also that physicians are frequently too careless in permitting mothers to wean their babies. We do not always sufficiently realize the difference, not only in the first year of life, but in later years, between breast-fed and bottle-fed babies. We all know that the death-rate among bottle-fed babies in the first year of life is much greater than among breast-fed babies, but we do not all realize the great influence breast-feeding has on the growth and development of children in the first five or ten years of life.

I saw some interesting statistics pertaining to this at the International Hygiene Exhibition in Dresden two years ago. In twenty-four families with one hundred and nine children, all breast-fed, at the end of at least five years of married life, not one of the children had died, while every one of the thirty-three families in which babies were all bottle-fed had lost one or more children during the same period.

Especially interesting were the results in families in which some of the children were breast-fed and some bottle-fed. In seventy-nine families of this class investigated there was a group of twenty-nine families with eighty-five breast-fed and one hundred and nine bottle-fed babies. At the end of eleven years all of the breast-fed children were alive and 57 per cent. of the bottle-fed babies were dead. In another group of thirteen families with forty-eight breast-fed and twenty-three bottle-fed babies, at the end of ten years all of the breast-fed babies were alive and all of the bottle-fed babies were dead.

We must not lose sight of these results of breast-feeding in infancy. The two main periods in which mothers wean their babies before the natural time for doing so are in the first month and in the fourth or fifth. The causes of weaning in the first month are vomiting, diarrhea, etc.

I often tell mothers that I do not care how many stools the baby has in the first month of life, whether one or two or twenty a day, nor how much the baby cries, provided it gains in weight. It frequently takes several weeks for a baby's stomach to adjust itself to mother's milk and during this time more or less gastro-intestinal trouble is bound to result. If the mother concludes that this is due to some imperfection in her milk and weans her baby on this account, a great mistake is made. I believe that the occasions when a baby should be weaned on account of some fault in the mother's milk are rare. When, after a thorough trial, it is found that a baby will not thrive on breast-milk, the fault is usually with the baby and not with the mother.

Dr. Frank C. Neff, Kansas City, Mo.: I think that Dr. Lowenburg's criticism of the medical profession is well founded in many ways. It does not apply, however, to men who are practicing pediatrics.

A custom which I have followed, and which I understand from Dr. Smith is followed in Boston, is to secure the breast-milk whenever it can be obtained from healthy women. Often the mother is willing to nurse the baby, but she thinks that she has not enough milk and does not know what else to do but give it the bottle. In this case, it is my practice to give supplemental feedings: to find out how much the baby is getting by weighing it before and after nursing and then to get supplemental milk from relatives or friends or any healthy mother who has more milk than she needs. When this milk is not procurable in any other way I have resorted to advertising in the daily paper, offering to pay a healthy mother so much a week for so many ounces of milk, she to come to the house as often as necessary and have the milk drawn out to be kept on ice and used subsequent to each nursing—not to take the place of any nursing. The baby should be nursed at the breast as much as possible and then fed this breast-milk from the bottle. I should like to ask you to try this method. It is surprising what a small amount of breast-milk some babies thrive on. This will solve many problems in cases in which the milk is insufficient for complete feeding.

Dr. E. O. Benson, Chicago: In the great majority of cases, there is no difficulty in inducing the mother to nurse the baby. In fact, the great majority of mothers among the better classes are anxious to nurse their babies. They have heard that there is a large proportion of mothers who cannot nurse their babies, and they are afraid that they may be in that class.

Years ago, when percentage feeding was first introduced, it was thought that a panacea had been found, but experience has taught us that there is no substitute for mother's milk, and this knowledge has come to the reading laity. As Dr. Gengenbach mentions, the nursing possibilities of women are influenced by their mental emotions and by artificial surroundings. A large proportion of women among the poorer classes take it for granted that they should nurse their babies. They have nothing else to think of but the care of their houses, their husbands and babies. Some mothers have difficulty because they are underfed, others because they are overfed. We must avoid too rich food as well as too poor food. In certain rural communities in the old country, in which mothers eat sour milk, old bread and little butter, possibly meat once a week, and otherwise subsist on cereals and gruels, you will find a large proportion of healthy babies and a large proportion of mothers who are able to nurse their babies.

I do not believe that physicians are such great sinners as Dr. Lowenburg seems to intimate, but we must put this matter strongly to physicians in order that they may advise every mother to nurse her baby.

Some babies, even after the best efforts, must be put on artificial feeding. Dr. Lowenburg rather condemned the time spent in studying artificial feeding, but many babies come to us after they have been weaned without the advice of a physician. When we leave a case, after confinement for example, we tell the mother to come to us when the baby is in difficulty. She does not do it. She first takes the advice of the neighbors or the grandmother, and then, after the child's digestion has been damaged by experiment, she comes to the physician and he has to meet the problem of artificial feeding. The number of these cases is large and the physician is not responsible for them.

Dr. H. Lowenburg, Philadelphia: My experience does not permit me to agree with Dr. Zahorsky as to the inability of many mothers to nurse their babies, nor with the importance he places on the occurrence of dyspepsia in breast-fed babies. Possibly I meet just as many cases of indigestion and green stools in the breast-fed as he does, but I have come to regard them as of no importance and pay absolutely no attention to them. I meet green stools, curds and colicky babies, but, if the child continues to gain in weight—you will find that most of them do—I think that we should pay no attention to the character of the stools at all. I believe that from the cradle up infants require a little wholesome neglect. I think that they should not be fussed over too much. I think that we should pay less attention to the importance of dyspepsia in the breast-fed and think that all women with mammary glands can nurse. The patients that come under our observation who will not be able to nurse their babies will then become fewer in number. I do not say that women are not willing to nurse, but I *do* say that many of them are actuated by fear that they cannot, or that their milk does not agree with the child. It is important, as Dr. Zahorsky suggests, to make a systematic study of the stools of the breast-fed, to learn, if possible, just why it is that these infants do have green movements, because I believe that almost every one of them does.

It is important that the breasts should receive attention during the whole puerperium. Every other physical defect of the mother should be noted and corrected as well.

Dr. Wahrer mentioned, as an etiologic factor in the discontinuance of breast-feeding, the interference of relatives. This is often carried to extremes, especially by those who have had little if any experience, as when a maiden aunt who never gave birth to a child advises against nursing. Trained nurses are often responsible for unasked-for advice which leads to a discontinuance of the breast-food. I should not tolerate any interference from the nurse in a matter of this kind. Feeding and the care of the breast is in the hands of the physician, and the nurse should know it from the beginning. I criticize both the pediatrist and the general practitioner. So many of these cases occur among the poor and ignorant. Their physicians actually profess to know nothing about breast-feeding and still less about bottle-feeding, and yet the first thing they do when they meet colic and green stools is to put the baby on some patent food. I think that this criticism of the general practitioner is just. I think that the reason he is at fault, and this is where the pediatrist deserves censure, is that the pediatrist sets him a bad example by being a little too much in a hurry to put the child on the bottle. I will not put a baby on the bottle without a good sound reason.

Dr. Chapin's proposition is a fair one. I usually get at the women psychologically as best I can. I start out with the proposition that they can nurse and explain to them the advantages which will accrue to their infant, themselves and their husbands. Then I convince them of the importance of weighing the child before and after nursing to demonstrate to them that they have enough milk. Weekly weighings are insisted on, not oftener, to show them that their babies are gaining. Sometimes I will admit that I cheat a little bit in the beginning and tell the mother the infant has gained even if it has not. I think it is best to do this in order to encourage her. Soon the gain is inaugurated in nearly every case. Then I study the milk. If I find any ingredient at fault I increase or diminish it by regulating diet, fluids, laxatives and exercise. I always flood them with water in the beginning whether the milk is good or bad. This increases the total quantity and aids the infant's digestion. The quality can be controlled later. I wish again to emphasize the importance of the psychic element. There is only one type of woman that occasionally appears to be practically hopeless, and that is the very fat woman who has more fat than glandular substance.

# A THEORY OF THE CAUSE OF ECTOPIC PREGNANCY

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Various speculations have seemed to explain the cause of ectopic pregnancy because, as we shall see later, they contain an element of truth so far as based on secondary causes present in only a few cases. Webster[1] was the first to formulate a working hypothesis comprehensive enough to embrace most of the observed phenomena and sufficiently fundamental to be a means to furthering our knowledge of the cause, when he definitely stated that the ovum always embeds in Müllerian tissue. At the time he formulated this hypothesis he had in mind that ectopic pregnancy always originates as tubal pregnancy; that is, the ovum embeds in the tube and not in the ovary (ovarian pregnancy) or in the peritoneum (abdominal pregnancy); but later, after undoubted cases of ovarian pregnancy were observed, he explained them as due to the extension of Müllerian tissue into the ovary. This hypothesis of Webster's leaves still unexplained the cases of abdominal pregnancy believed by some authorities to occur; it also is too speculative by attempting to explain embedding at an abnormal site as caused by reversion of the tissue-cells through degeneracy.

In stating that the ovum always embeds, in cases of extra-uterine pregnancy, in anomalous embedding areas; that is, in specialized tissues which, when normally situated, are in the endometrium, I formulated a theory that explains the cause of ectopic pregnancy wherever it might be located.[2] Before proving this theory by submitting further evidence I shall review briefly our knowledge of the early stages of human pregnancy and look into the causes of ectopic pregnancy as stated by others.

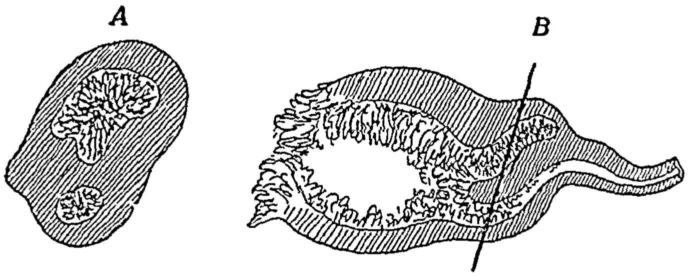

Fig. 1.—Outline sketch of sections from a tube which contained a six weeks' ovum; the ovum was situated proximal to the diverticulum; A, transverse section taken from plane indicated at B.

### KNOWLEDGE OF THE EARLY STAGES OF HUMAN PREGNANCY

No one has observed a human fertilized ovum before it has become embedded, and hence nothing is definitely known in regard to the ovum from the time of its discharge from the ovary up to the time of its nidation in the endometrium. The earliest embedded ovum found in the uterus is the one described by Hubert Peters.[3] The external dimensions were 2.4 by 1.8 mm. and the internal dimensions 1.6 by 0.8 by 0.9. The embryo was 0.16 mm. in length. The uterus containing the embedded ovum was removed at necropsy within a few hours after death from a woman who had committed sui-

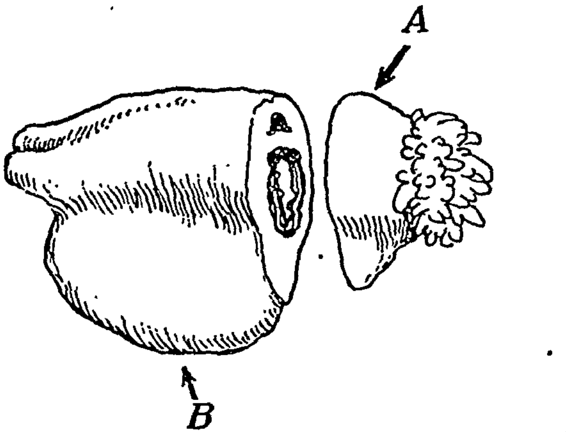

Fig. 2.—An outline sketch to show the relative size and situation of a large diverticulum which communicated with the main lumen near the fimbriated end. A small ovum was situated in the part represented at A. The diverticulum lies parallel to and below the main tube; it is much smaller at the isthmus where it again communicates with the main lumen; B indicates the ovary.

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[1] Webster, J. C.: Ectopic Pregnancy, New York, 1895; Study of a Specimen of Ovarian Pregnancy, Am. Jour. Obst., 1904, pp. 1, 28, 76; A Text-Book of Diseases of Women, Philadelphia, 1907.

[2] Huffman, Otto V.: Ectopic Pregnancy Associated with Anomalous Fallopian Tubes, Surg. Gynec. and Obst., May, 1913.

[3] Peters, Hubert: Ueber die Einbettung des menschlichen Eies und das früheste bisher bekannte menschliche Placentationsstadium, Leipsic and Vienna, 1899.

cide. The history of the case showed that thirty days had elapsed since the beginning of the last menstrual period, and that two days had elapsed since the omitted period. The age of this ovum was about fourteen days. It was apparently larger than an ovum from another case, aborted sixteen and a half days after cohabitation, and described by Bryce, Teacher and Kerr.[4] These ova, which had become securely embedded and which had been fecundated for a number of days, were not so very much larger than mature, non-fertilized ova in the ovary, the greater diameter of which is given as 0.25 mm. by Waldeyer, and as from 0.22 to 0.32 mm. by von Ebner.

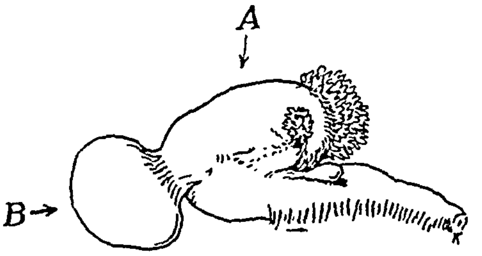

Fig. 3.—Tubal pregnancy in a malformed tube; *A*, situation of the ovum; an accessory ostium is present and below it there is a small cyst derived from the epoophoron; *B*, large cyst in the subserosa situated where the tube is curved back upon itself.

In the matter of computing the duration of gestations it should be kept in mind that we have no definite act or criterion which indicates the beginning of pregnancy. The act of insemination may be quite remote from that of fertilization because spermatozoa remain alive in the uterus and tubes for a number of days. Strassmann found human spermatozoa alive one week after coition and Bossi records a case in which they lived for more than twelve days. Dührssen[5] found living spermatozoa in a woman who stated that three and a half weeks had elapsed since having had coitus. Just when and where the spermatozoa fertilize the ova, that is, the most usual site for this meeting, no direct evidence yet shows. We know, however, that spermatozoa have been found in the fallopian tubes fifteen hours after the act of insemination, as in the case mentioned by Birch-Hirschfeld in which the woman had been fatally asphyxiated by gas during coitus. We also have the observations of Dührssen, wherein he found motile spermatozoa in a fallopian tube removed at a surgical operation. Then, too, we have the cases of ovarian pregnancy and tubal pregnancy, which indicate that the spermatozoa must find their way into the tubes.

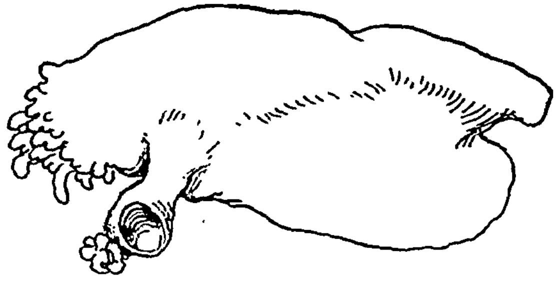

Fig. 4.—The tube from the opposite side of a case of tubal pregnancy. An accessory tube is attached to the broad ligament.

Granting, then, that the spermatozoa normally find their way into the tubes of women within a few hours after coitus, just as they do in the case of all other mammals, the next question to present itself is as to the manner in which the fecundated ovum is nourished prior to implanting itself in the endometrium; but here again we are without any absolute evidence. We do not know whether the tube is capable of furnishing nourishment by a secretion, nor do we know whether there is any secretion from the endometrium analogous to the uterine milk of some of the lower animals. On the other hand, we have evidence of the fertilized ovum influencing the maternal tissues as though by hormones, because the endometrium undergoes all the changes characteristic of pregnancy even though the fertilized ovum be retained in the tube.

If we should supplement the few observations which have been made in regard to human pregnancy with the great number which have been made on other mammals, we might safely conclude that fertilization usually occurs within the tube and that the fertilized ovum finds its way into the uterus within a day or two after becoming fertilized. We are discussing human pregnancy, however, and such analogies might only mislead us, because tubal or ovarian pregnancy, that is, primary ectopic pregnancy, does not occur in other mammals, although they are known to have extra-uterine pregnancy following rupture of the uterus. Bland Sutton,[6] who is the leading authority on this subject, has clearly shown that ectopic pregnancy in animals is caused by rupture of the uterus and is not due to implantation in the oviducts, except possibly in the one case in an ape observed by Waldeyer.

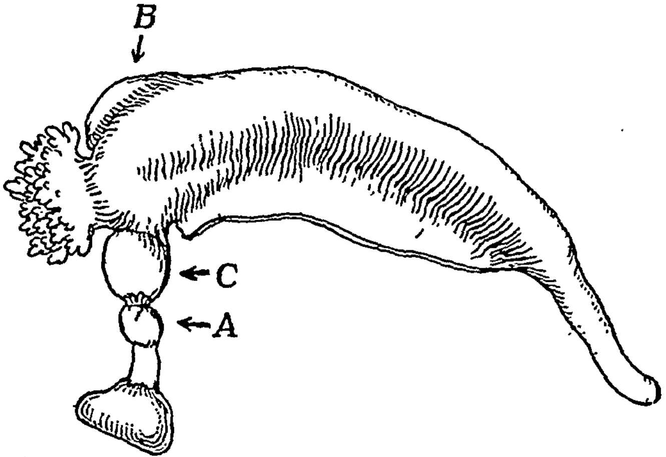

Fig. 5.—Tubal pregnancy in a malformed tube; *B*, the swelling caused by the ovum; *C*, a small cyst to which is attached an accessory tube. *A*, fringe of fimbriae which surrounds the constriction where the cyst and accessory tube are joined. Attached to the dependent end of the accessory tube there is a cyst of irregular shape.

### THE ALLEGED CAUSES OF ECTOPIC PREGNANCY

Since the majority of ectopic gestations occur in the tube, most of the theories as to the cause of this most interesting pathologic condition have been based on interference with the mechanics of the passage of the ovum from the ovary to the uterus. This interference might arise from:

1. Obstruction to the passage of the ovum.
2. Defective propelling forces.
3. An abnormal ovum.

#### *Obstruction*

Those observers who have reported ectopic pregnancy as being caused by an obstruction have found malformations of the tube, myomas or inflammatory conditions. Offsetting these findings are the results of the experiments conducted by Tainturier, Mandle and Schmidt, who ligated the oviducts of rabbits after fertilization, with the object of obstructing the passage of the fertilized ovum, but who never succeeded in producing ectopic pregnancy. One of the most interesting conditions which may affect the passage of the ovum is that described by Landau and Rheinstein,[7] and J. W. Williams.[8] These authors a number of years ago called attention to diverticula of the tube as being a possible cause, in a purely mechanical way, of ectopic pregnancy.

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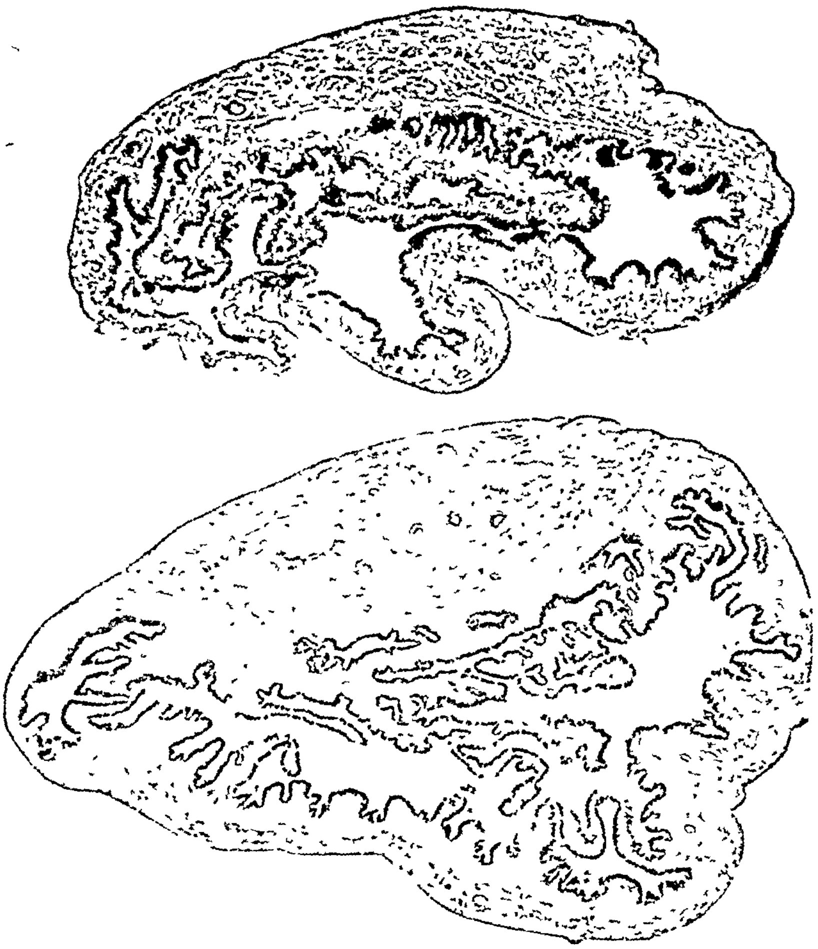
[4] Bryce, Teacher, and Kerr: Contributions to the Study of Early Development and Imbedding of the Human Ovum, Glasgow, 1908.

[5] Dührssen: Lebendige Spermatozoen in der Tube, Centralbl. f. Gynäk., 1893, p. 592.

[6] Sutton, J. B.: Surgical Diseases of the Ovaries and Fallopian Tubes Including Tubal Pregnancy, Philadelphia, 1891. The Purvis Oration on Abdominal Pregnancy in Women, Cats, Dogs and Rabbits, Lancet, London, 1904, ii, 1625.



Figs. 6 and 7.—Photomicrographs (×15). Transverse sections of accessory tubes which prove their character by the typical arrangement of the mucosa in folds.

Likewise, Schatz mentioned accessory ostia as making a vortex in the currents set up by the cilia, which served to hinder the progress of the ovum in its transit through the tube. He based his vortex theory on a case of ectopic pregnancy situated in an abnormal double tube with triple communications between the two tubes, which he believed to have caused a vortex that hindered the progress of the ovum. In this connection, I wish to call attention to the fact that Werth,[9] in discussing this theory of Schatz, suggested that a tube with accessory ostia might possibly be predisposed to ectopic pregnancy. Richards, who was the first to describe accessory ostia, suggested that the ovum might drop out of such ostia and result in ectopic pregnancy. Herzog[10] studied thirty specimens of ectopic pregnancy from which he concluded that anomalies were a factor, but only as causing an obstruction. He hinted at very vital conditions, however, when he directed attention to menstruating tubes as an anomaly. Henrotin and Herzog[11] described a case of pregnancy in a blind accessory ostium. Sanger[12] likewise reported such a case.

### *Defective Propelling Forces*

Those who have reported that the propelling forces were defective believe that inflammation destroyed the epithelium. This theory was started many years ago by Lawson Tait. Subsequent observers and students such as Opitz, Micholitsch and Werth after finding inflammatory lesions in many cases of ectopic pregnancy have accepted that theory, while other students of the pathology of ectopic pregnancy, such as Kermauner and Williams, hesitate. Students of the pathology of ectopic pregnancy have never given inflammation, as a causative factor, the place that the clinicians have; for the inflammation does not necessarily interfere with ciliary motion, and inflammation in the endometrium, the normal tissue for embedding, is a most certain cause of sterility. In considering this theory of the lack of ciliary motion as being the cause of tubal pregnancy, it should be borne in mind that Lawson Tait proposed it at a time when the uterus was supposed by many to be free of cilia. In view of our present knowledge of ciliated epithelium both in the uterus and the tubes, I suggest that, if the cilia normally prevent embedding in the tubes, they should also prevent embedding in the uterus. J. W. Williams, in studying the possibility of lack of cilia being the cause of tubal pregnancy, was able to find cilia in all his specimens of tubal pregnancy, and Zedel, who also studied this question, saw the cilia in motion in several fresh specimens which he examined.

Assuming that the tube normally undergoes movements favoring the passage of the ovum into the uterus, conditions which might interfere with such movements would be hyperinvolution, either puerperal or as due to lactation; ovarian tumors, and psychic conditions affecting the tubes reflexly.

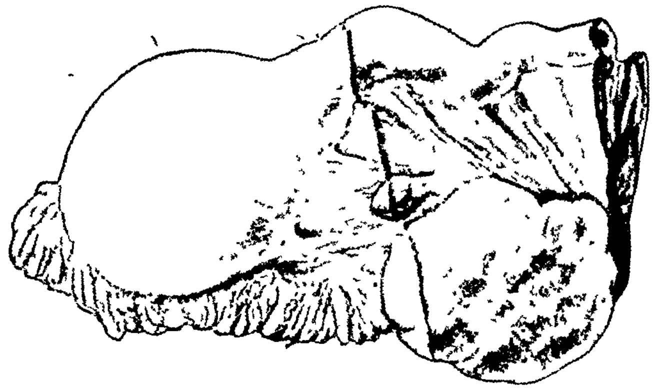


Fig. 8.—Tubal pregnancy, accessory ovary, main ovary.

### *Abnormal Ovum*

Those who have believed the ovum to be abnormal have sought evidence in an inflammatory condition of the ovary which, according to their theory, would result in the discharge of ova without the power of motility that they assume the ova to possess. Of course, this is mere conjecture on their part.

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7. Landau and Rheinstein: Beiträge zur pathologischen Anatom
der Tuben, Arch. f. Gynak., 1890, xxxix, 27 to the
8. Williams, J. Am. J Patholo 1891,
Histology of the New York,
377; Obstetrics, New York,
9. Werth, R.: Die Extrauterineschwan andbuc
der Geburtshulfe, Bd. ii, Teil ii, Wiesbaden
10. Herzog, M.: The Pathology of Tuba Jou
Obst., 1900, xlii, 145.

enrotin and Herzog: Anomalies du canal de Müller comme grossesse ectopique, Rev. de chir. abdom., 1898; Very Early in Ectopic Pregnancy in a Diverticulum, New York Med 21, 1899.
r, M.: Conception durch ein accessorisches Tubenostium; durch frühe ectopische Schwangerschaft, t, 93, i, 21.

In regard to abnormal ova, however, it is interesting to note that Robert Barnes, who was one of the earliest students of ectopic pregnancy, observed the great frequency of twins in tubal pregnancy, and that Parry confirmed his observation. In fact, the latter found that twins occur four times more frequently in tubal pregnancy than in normal pregnancy, an explanation being that a large twin ovum or abnormal ovum unable to pass through the tube embeds in it. In two cases of ectopic pregnancy which have come under my own observation there is a history of a previous twin birth. This idea is similar to the theory advanced by Sippel that the ovum, in transmigrating across the abdominal cavity from one ovary to the tube on the opposite side, consumed sufficient time to permit the growth to advance to such a degree that it would be unable to pass through the oviduct. In considering the abnormal ovum theory it should be observed that Mall has shown that 7 per cent. of all uterine pregnancies terminate in pathologic ova, that 50 per cent. of the aborted ova are abnormal, that 96 per cent. of the few unruptured tubal pregnancies which he has studied proved to be pathologic, that forty-seven out of eighty-seven tubal-pregnancy fetuses were deformed and that twelve of these eighty-seven fetuses were monstrous and only eight *certainly normal*. Although this evidence is very striking, the theory does not explain cases of ectopic gestation which have endured to term and have produced normal infants removed by operation.

There is one conjecture hinted at by the embryologists, which may be mentioned here; that is, the possibility of toxic embryotrophy being supplied by the tube. This presupposes that the ovum under normal conditions is nourished by a secretion of the tube. A poison secreted by the tube might have the same influence as physicochemical means have, when used by experimenters to produce monsters from the eggs of marine animals. Drugs or unknown conditions affecting the secretion of the tube might possibly be the remote cause.

Werth, Couvelaire,[13] Williams and nearly all observers have been able to find in tubal pregnancy a confirmation of Hubert Peters' findings in the case of normal pregnancy, but not all authorities agree as to the occurrence of a definite decidual membrane in a pregnant tube. Small areas of decidual cells may be seen, but a definite decidual membrane has never been found. Such areas of decidual cells have been observed by Williams, Webster and Couvelaire. An important observation is that of the occurrence of decidual cells in the tube opposite to the one in which the gestation has occurred. Such observations have been made by Webster, Mandle, Goebel, Janot, Krömer and Williams. Embryologists and present-day students of the decidua believe the decidual cell to be protective to the maternal organism against the too aggressive invasion by the trophoblast of the ovum. Hubrecht in his studies of the hedgehog, Webster and Bryce, Teacher and Kerr in man have emphasized their belief in the protective nature of decidual cells.

This phase of the study of tubal pregnancy has been greatly hindered by the fact that 78 per cent. of tubal pregnancies terminate in tubal abortion; and here the same phenomenon occurs as when abortion takes place in the uterus, namely, hemorrhage. This hemorrhage is so extensive that it destroys the ovum to such an extent that many specimens are rendered worthless for study. This fact, taken together with the fact that the other 22 per cent. terminate in rupture of the tube, points out very clearly the difficulties of studying this question of the occurrence of true decidua. The very early cases never reach us, because the embryo is extruded into the abdominal cavity and is absorbed—the disturbances not being severe enough to cause surgical intervention. In later cases, when an ovum undergoes death or is extruded from the tube and is too large to readily undergo absorption, suppuration may ensue. Such cases may account for some of the ectopic pregnancies which have occurred in pyosalpingitis as described by Hirst. Then, too, extra-uterine gestations have been found to be subject to all the diseases that may occur in intra-uterine pregnancy, that is, *hematoma mole, hydatidiform mole and hydramnios*, or to be associated with chorio-epithelioma and eclampsia.

### *Webster's Theory*

In 1895 J. Clarence Webster reviewed all the important literature on ectopic pregnancy and pointed out that the various explanations up to the time of his writing had been conjectures only. He, on the other hand, was able to formulate a theory which was a beginning in the right direction. Webster came to the conclusion that the ovum always embeds in Müllerian tissue. He demonstrated decidual reaction in nearly all of his cases and advanced the view that the ovum could develop only in tissue capable of undergoing such a genetic reaction. His theory, which served as a working hypothesis for all subsequent investigators, brought out the fact that the ovum does not embed in the peritoneum as once supposed. When a number of cases of ovarian pregnancy had been undoubtedly proved, namely, those described by Van Tussenbroek,[14] Thompson and others, it was thought that Webster's theory would become valueless. He soon showed, however, that Müllerian tissue might extend into the ovary. His observations were confirmed by those of de Sinety, Melassez and J. W. Williams, all of whom

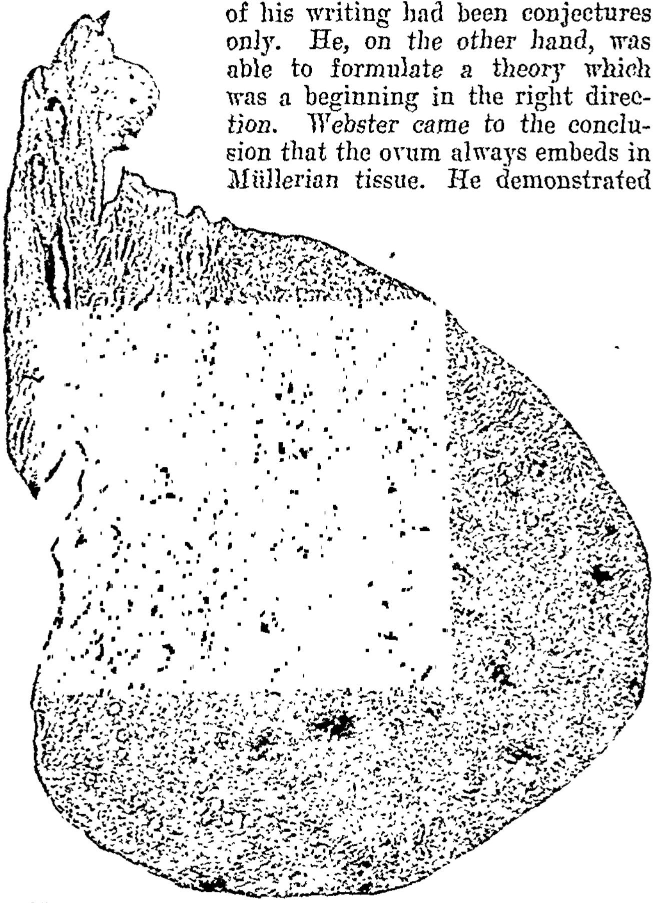

Fig. 9.—Photomicrograph (×20). Section from accessory ovary represented in Figure 8.

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[13] Couvelaire, A.: Etudes anatomiques sur les grossesses tubaires, Paris 1901.

[14] Van Tussenbroek, C.: Un cas de grossesse ovarienne, Ann. de Gynec., 1899, iii, 537.

demonstrated the extension of Müllerian tissue into the ovary. Webster in his theory as to the cause of ectopic pregnancy laid emphasis on the fact that it always embeds in Müllerian tissue capable of undergoing the genetic reaction, and he later mentioned that it was doubtless the special genetic action in areas of decidua-like cells such as found by Schmorl in the ovary in normal pregnancy which might determine embedding in the case of ovarian pregnancy. Small areas of cells similar to decidua cells have been observed under the peritoneum in normal pregnancy and they have been termed decidual nodes. Webster's theory is, then, that implantation occurs at an abnormal site because certain cells there, originally derived from the Müllerian duct, have, through degeneracy, reverted and again acquired their decidual-reacting or genetic property.

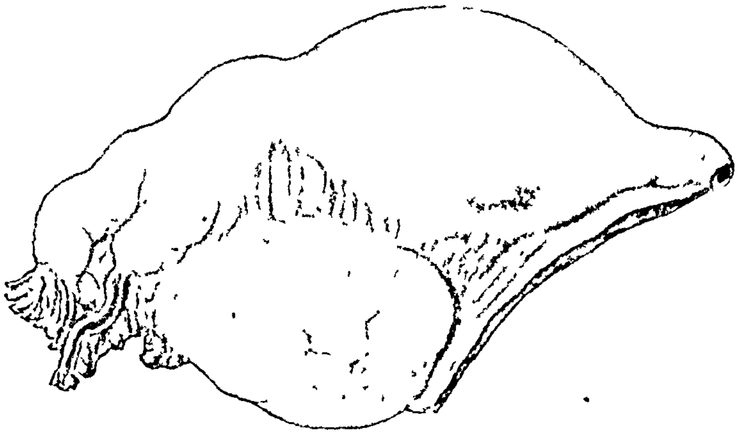

Fig. 10.—Tubal pregnancy in a malformed tube. An elongated accessory tube is attached to the main tube.

### THE ANOMALOUS-EMBEDDING-AREA THEORY

I observed and described a very remarkable specimen of ectopic pregnancy removed at necropsy. I was able to examine and study the entire uterus as well as both tubes and ovaries with a view to finding some confirmation of the inflammation or obstruction theories. My results were negative. I found, though, two supernumerary but rudimentary fallopian tubes, one attached to each of the fully developed, apparently normal tubes; which enabled me to offer an explanation for the tubal pregnancy. Starting with the fact that each tube was congenitally malformed, as indicated by the supernumerary tube, I inferred that early in the embryologic development of the individual there was a duplication of the Müllerian ducts, and that with the subsidence in the growth of one pair, those portions which should have formed a second uterus, with all the factors that determine an implantation area, became fused as "rests" with the walls of the tubes which went on to full development, and that such a rest permitted the ovum to embed. Keeping this explanation in mind, I took as a working hypothesis that ectopic pregnancy is determined by an anomalous embedding area. I called attention to the mutual physiologic relation of fecundated ovum to embedding area and referred to the localization of placentation or embedding areas in the uteri of some of the lower animals, as, *for instance*, the cotyledonary burrs in the virgin cow and the *coussinets* of Hollard in the virgin rabbit. Not being able to recognize in the morphologic details of such areas anything that characterized the special tissue or factor essential to embedding, I could not support my hypothesis by direct evidence, so I set about to examine a large number of specimens of ectopic pregnancy with a view to finding some gross anomaly or malformation which would point to the probable misplacement of embedding tissue during the maldevelopment. Out of twenty-four specimens of tubal pregnancy removed by operation, only nine could be examined with certainty for minor anomalies. The other fifteen specimens were too extensively damaged by the large size of the gestation, the rupture or adhesions, to determine positively whether or not an anomaly existed. Of the nine that could be examined I found one with four accessory ostia, one with an accessory ostium, two with accessory tubes attached to the broad ligament and one with accessory ovaries. Two of the specimens which did not show an anomaly were accompanied by the tubes from the opposite side that had been removed at the time of the operation for the ectopic pregnancy. One of these non-pregnant opposite tubes had an accessory ostium and the other one was short and rested on a parovarian cyst. Of the remaining three apparently normal tubes, one was associated with an ovarian cyst 5 cm. in diameter, evidently derived from the rete ovarii.

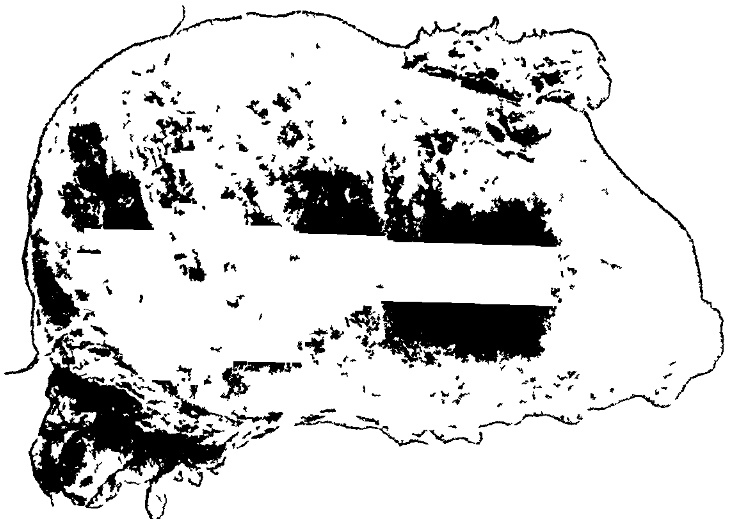

Fig. 11.—Tubal pregnancy with rupture and hemorrhage. The chorionic villi protrude from the rupture; the tube is greatly dilated by blood-clot; the fimbriae are edematous. This is a common type of specimen.

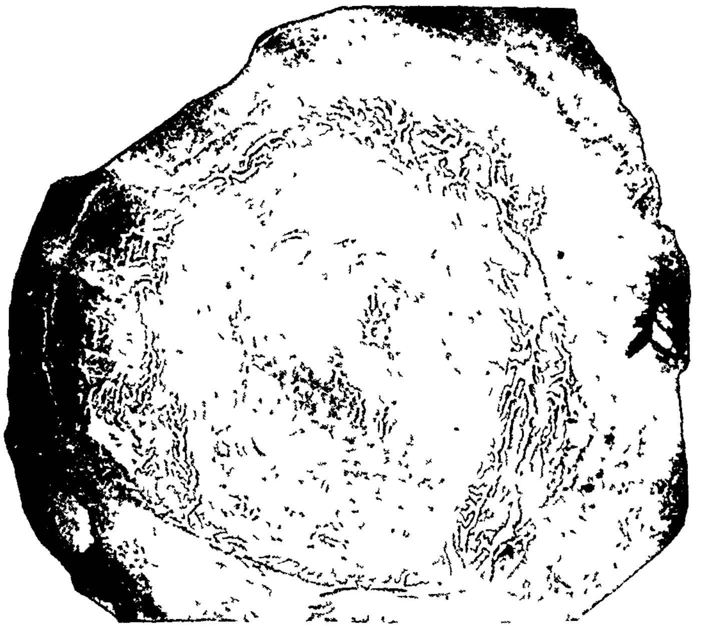

Fig. 12.—Photomicrograph (×4). Transverse section of a fallopian tube distal to the attachment of the ovum. The anomalous condition of a tube within a tube. The tube in the center has a thick muscularis which is surrounded by mucosa thrown into folds which project into the circular lumen. The outer wall of the circular (outer) lumen is composed of mucosa, and, in turn, a muscular layer. The central lumen is lined with normal mucosa. The central lumen ends blindly near the isthmus.

In addition to reporting these findings, I also applied this hypothesis to an interpretation of a very early tubal pregnancy described by Rubin.[15] In Rubin's specimen a very small ovum was found embedded in the tube, proximal to a thickened muscular spur that, in turn, was proximal to a diverticulum of the tube. Rubin regards the spur as having arrested the ovum before it even reaches the diverticulum. His explanation seems too simple; with my hypothesis in mind the spur and diverticulum should be regarded as evidence of maldevelopment. Likewise in a case of ovarian pregnancy described by Graham,[16] in which a remnant of fallopian tube was found in the ovarian mass, I probably should regard it as a malformation or ingrowth of Müllerian tissue into the ovary, while Graham believes it to have been twisted off and separated from the tube by the growth of the ovum.

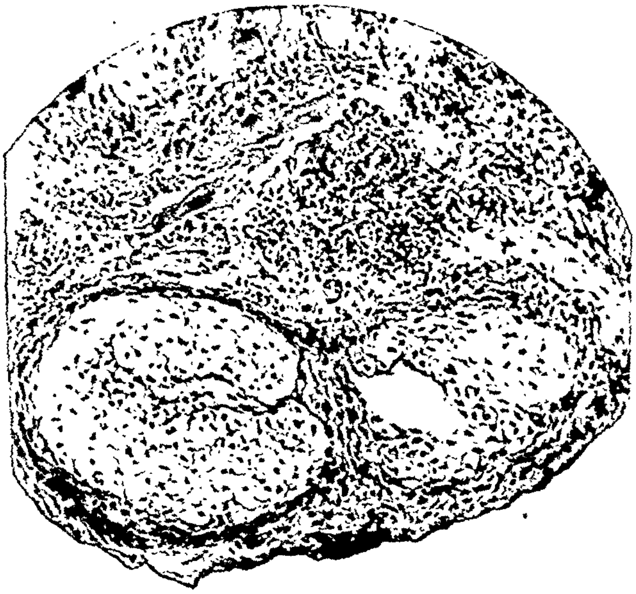

Fig. 13.—Photomicrograph (×250). Nest of decidua-like cells found in the wall of a tube near the peritoneum. The cells seem to be arranged around an endothelial lining which they have crowded in and they seem to have partially obliterated a lumen or space.

### *Further Evidence*

It is in support of my theory that I wish to report further evidence. Before doing so I shall review in logical sequence certain findings which permit approach by steps, as it were, to the theory of an anomalous embedding area.

1. Mauriceau and others have described cases of pregnancy in a rudimentary horn of the uterus.
2. Kehrer has collected eighty-four cases of cornual pregnancy from the literature, in 78 per cent. of which there was no communication between the rudimentary horn and the fully developed horn, the pregnancy having been the result of the transmigration of either the spermatozoa or the fertilized ovum to the rudimentary horn.
3. Henrotin and Herzog, and Sänger have described cases of ectopic pregnancy situated in blind accessory fallopian tubes.
4. Cases of ectopic pregnancy associated with accessory tubes and ovaries have been described by me.

I have examined sixty-eight specimens of tubal pregnancy. In each one I looked for an obstruction, signs of inflammation, and evidences of maldevelopment. In none could I find an obstruction. Some showed mild grades of inflammation which were readily accounted for by the invasion of alien cells and the hemorrhage. I found malformations in thirty-seven specimens:

Six had large irregular diverticula which could not have been caused by the growth of the ovum (Figs. 1 and 2).

Five had accessory ostia (Fig. 3).

Three were associated with anomalies of the opposite tube (Fig. 4).

Two presented such an anomaly as represented in Figure 5.

Two had accessory ovaries (Figs. 8 and 9).

One had an anomalous tubule attached to the broad ligament.

Five had accessory tubes (Fig. 10 and Figs. 6 and 7).

Nine were simple dilatations of the tube by the growth of the ovum (Fig. 11).

One showed a most unusual anomaly, a tube within a tube (Fig. 12).

Three showed nests of decidua-like cells (Fig. 13).

All of the anomalies found were examined microscopically in order to prove definitely their exact nature.

In none of the specimens was I able to find a true decidual membrane. When the ovum was still *in situ* it was found embedded beneath the mucosa which, with the blood-clot, covered it on the side next to the lumen of the tube, while on the side next to the muscularis it was attached to a rich layer of cells derived from the trophoderm which had invaded the maternal tissues. These cells and the secondary inflammation caused by them gave an appearance, in some cases, that might readily have been mistaken for tuberculous inflammation, which in former years was given quite a place as a cause of ectopic pregnancy. In recent years less has been written about tuberculous inflammation as a cause of ectopic pregnancy, and I take this to be due to our better knowledge of the cells derived from the trophoblast, of the syncytial cells and of foreign-body giant-cells.

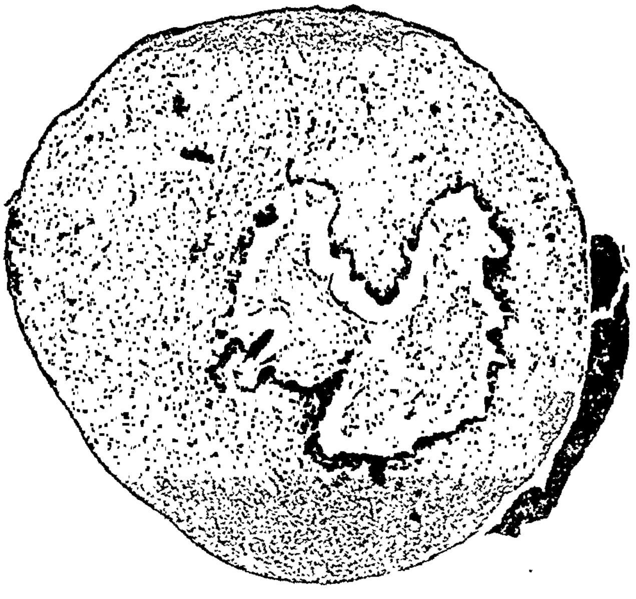

Fig. 14.—Cross-section of an accessory tube attached to the broad ligament of a tube which had a nest of decidua-like cells near its peritoneal surface.

We also have more knowledge of the membrana decidua compacta, which we now know not to occur as a regular distinct membrane in a pregnant tube. I could find no true decidua in any of my tubes. In three there

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[15] Rubin, I.: Early Ovum in a Fallopian Tube, Proc. New York Path. Soc., 1912, xii, 107.

[16] Graham, G. S.: A Case of Ovarian Pregnancy, Jour. Med. Research, 1912, xxvi, 499.

As the function of the adrenal cortex has so far been a complete mystery, the isolation of the above-described crystalline principle and its relation to the vasoconstricting body of the blood is of especial interest.

*A full account of our work will be published later in the Journal of Pharmacology and Experimental Therapeutics.*

# ACCIDENTS IN TRANSFUSION

## THEIR PREVENTION BY PRELIMINARY BLOOD EXAMINATION: BASED ON AN EXPERIENCE OF ONE HUNDRED TWENTY-EIGHT TRANSFUSIONS *

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AND
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NEW YORK

Accidents following transfusion have been sufficiently frequent to make many medical men hesitate to advise transfusion, except in desperate cases. It has been our opinion since we began making observations on this question in 1908 that such accidents could be prevented by careful preliminary tests, leading to the exclusion of agglutinative or hemolytic donors. Our observations on over 125 cases have confirmed this view and we believe that untoward symptoms can be prevented with absolute certainty.

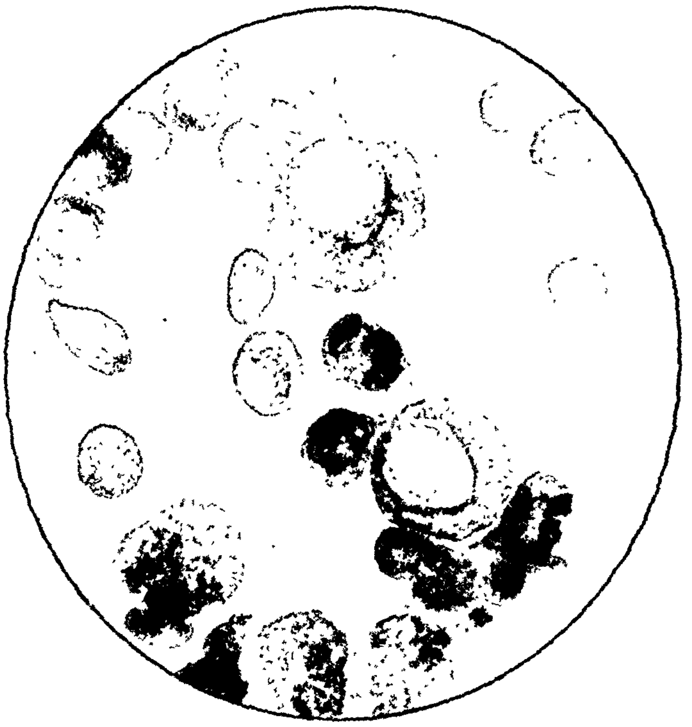
It has been the general impression that preliminary blood-tests ought to be done to determine the compatability of the donor's with the patient's blood, but there has been little direct observation as to the correspondence between the test-tube phenomena of agglutination and hemolysis and symptoms arising after transfusion.

Scattered reference to the hemoglobinuria following transfusion have made it clear that the occurrence of hemolysis between the donor's and patient's blood is a real danger. Thus, Flörcken[1] reports hemoglobinuria in two out of five cases which he transfused, and Gray[2] reports hemoglobinuria in one out of three transfused cases. Suttner,[3] reporting four transfusions, says: "One case resulted fatally from hemolysis, which might have been prevented had not its urgency required prompt action." Pool[4] reports a case of delirium and extreme jaundice following transfusion. In the case of Pepper and Nisbet,[5] a fatal hemoglobinuria followed a second transfusion for pernicious anemia. Cases have been reported by Crile,[6] Watts[7] and others. Rehling and Weil[8] report a case with severe hemoglobinuria which was anticipated by blood-tests. Undoubtedly many other cases that have occurred have never been reported.[9]

The question whether or not interagglutination is a danger in transfusion is still an open one. Our experience leads us to believe that its occurrence under certain circumstances may vitiate the result of transfusion and should be avoided, although no one has yet shown that it causes extensive thrombosis or embolism as we feared at first. The few observations of Schultz do not bear directly on the question because his transfusions were small in amount as compared with the amount usually transfused by the direct method.

In emergencies and occasionally at other times, relatives or friends of the patient have been used as donors. Their blood should of course be tested. Iso-agglutinins are inherited, as first pointed out by Ottenberg[10] in an article with Epstein, published in 1908. No certainty can be secured, however, without examination, as each individual inherits from either one of his parents.

We shall omit any detailed reference to the technic of agglutination and hemolysis tests. We use a modified Wright's capillary pipet method, first described by Epstein and Ottenberg.[11] This method has the advantage that it requires only as much blood as can be obtained from a finger prick from both patient and donor. With this method it is possible to examine ten or twelve donors within two or three hours.



Blood-smear of patient made during transfusion. The patient's serum was agglutinative to the donor's blood-cells. Phagocytosis was observed only in cases of this kind.

We have always performed Wassermann tests on prospective donors. The necessity of this has been demonstrated by the finding of five positive Wassermann reactions in prospective donors. In a well-equipped laboratory the Wassermann and other tests can be performed simultaneously and all can be completed within three hours.

### HEMOLYSIS

The hemolysis of one human blood by another is a pathologic phenomenon. It was formerly thought to be characteristic especially of carcinoma and tuberculosis, but it has been shown[12] to occur in a great variety of diseases.

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* From the Pathological Laboratory of Mount Sinai Hospital, New York. Part of this work was done while one of the authors held a Eugene Meyer, Junior, Fellowship in Pathology.

[1] Flörcken, H.: Direct Transfusion of Blood; Five Cases, München. med. Wchnschr., 1912, No. 49; abstr., The Journal A. M. A., Jan. 18, 1913, p. 250.

[2] Gray, F. D.: Direct Transfusion, Med. Rec., New York, 1911, lxxix, 198.

[3] Suttner, C. N.: Arteriovenous Transfusion by the Crile Method, Northwest. Med., 1911, iii, 192.

[4] Pool, E. F., and McClure, R. D.: Transfusion by Carrel's End-to-End Suture Method, Ann. Surg., October, 1910, lii, 433.

[5] Pepper, William, and Nisbet, Verner: A Case of Total Hemolysis following Direct Transfusion of Blood by Arteriovenous Anastomosis, The Journal A. M. A., Aug. 3, 1907, p. 385.

[6] Crile, G. W.: Transfusion with Note on Hemolysis, Surg., Gynec. and Obst., 1909, ix, 16.

[7] Watts, S. H.: Suture of Blood-Vessels, Ann. Surg., September, 1907, xlvi, 373.

[8] Rehling, M., and Weil, R.: Avoidance of Hemolysis in Transfusion, Am. Jour. Surg., March, 1909.

[9] Intravascular hemolysis causes hemoglobinuria only when it exceeds a certain limit. Smaller amounts of hemoglobin are removed by the tissues. (Boycott and Douglas: Jour. Path. and Bacteriol., January, 1910, p. 313). *This is probably why Crile did not notice hemoglobinuria in cases of tuberculosis to which he refers* (Tr. Am. Surg. Assn., 1909, xxvii, 80).

[10] Ottenberg, R., and Epstein, A. A.: Proc. Path. Soc. New York, 1908. Also von Dungern and Hirschfeld: Ztschr. f. Immunitätsforsch., 1910, v, 531; 1910, vi, 284.

[11] Epstein, A. A., and Ottenberg, R.: A Method for Hemolysis and Agglutination Tests, Arch. Int. Med., May, 1909, p. 286.

That it is necessary to make tests of this kind if hemolytic accidents are to be avoided, is evident from the fact that the blood of seventeen out of 128 of our patients was actively hemolytic for several different donors, as well as from the published reports of accidents and fatalities in cases in which preliminary tests had not been made.

The diseases in which hemolysis was observed were:

| | Cases |
|---|---|
| Purpura hemorrhagica | 2 |
| Carcinoma of the stomach | 3 |
| Carcinoma of the rectum | 1 |
| Lymphatic leukemia | 4 |
| Pernicious anemia | 2 |
| Chronic osteomyelitis (due to *Staphylococcus aureus*) | 2 |
| Pelvic abscess | 1 |

There were three instances of reverse hemolysis, that is, hemolysis of patients' cells by donors' serum. The first was in a patient who was suffering from postoperative hemorrhage. On subsequent examination the donor was found to be suffering from tuberculosis. The others were in a case of pelvic abscess and a case of pernicious anemia.

In all except two of the cases cited the patients' serums were hemolytic with only some, but not all, of the prospective donors' bloods, and by examining a certain number of men, one was eventually found who was not hemolytic with the patient. In two of these instances, on account of the desperate condition of the patients, hemolytic transfusions had to be ventured. In two additional cases (not included in the list) transfusion had to be abandoned because the serum of the patients was powerfully hemolytic to the cells of every donor examined. One of these was a case of lymphatic leukemia, and the other of pernicious anemia.

One of the hemolytic transfusions was done in a case of pernicious anemia. The serum of this patient was agglutinative and weakly hemolytic to the cells of the donor. The transfusion was followed by an intense hematuria which lasted about twenty-four hours, during which the hemoglobin dropped from 34 to 31 per cent., instead of rising further, as almost invariably happened after transfusion in other cases. In spite of the loss of the transfused blood, transfusion apparently exerted a favorable influence on the course of the disease, as the patient improved slowly but steadily during the following month.[13] The patient returned to the hospital eight months later, and a second transfusion was done. This time a donor was found whose blood did not agglutinate or hemolyze when mixed with that of the patient, although the patient's serum was hemolytic to the cells of four of ten donors. This transfusion was successful; the patient was greatly improved, and her life was prolonged for a year and a half.

In the other case (one of acute lymphatic leukemia), in which test-tube hemolysis was noted between the blood of the patient and that of the donor, the patient's serum sharply agglutinated the donor's cells, but only slightly laked them after three and one-half hours in the thermostat. There was no hemoglobinuria, but blood-smears made during and after the transfusion showed phagocytosis of red blood-cells by leukocytes in the circulating blood. The patient died forty-two hours after the transfusion. The case will be more fully discussed later under the heading of agglutinative transfusion (see photomicrograph).

In only four other cases in the whole series were any red blood-cells found in the urine after transfusion, and in these four cases they were found only in small numbers in the centrifuged sediment.

Jaundice occurred after transfusion in only one case in the series, and in this it was slight and transient, disappearing in two days. It may have been due to some other cause, as the patient had a carcinoma of the stomach (Old Series, No. 46).

The absence of hemoglobinuria in over one hundred cases in which hemolytic donors were excluded by examination and its occurrence only once in the whole series, and then in a case in which the test-tube hemolysis had been noted, proves that the danger of hemolysis can be absolutely excluded by careful preliminary tests.

### AGGLUTINATION

Iso-agglutination, unlike isohemolysis, is not a pathologic phenomenon, but occurs between normal human bloods. All human beings fall into four permanent hereditary and sharply separated groups with regard to whether their serums agglutinate each other's red blood-cells or not. When the blood of two persons belonging to the same group is mixed, no agglutination occurs. When the blood of two persons of different groups is mixed, agglutination, either of one by the other or of each by the other, always occurs.

It is not necessary here to go into details of the grouping. The important questions are whether or not it is necessary to pay attention to agglutination in selecting donors and what the influence of agglutination is on the result of transfusion.

Human iso-agglutinins are present in only relatively weak concentration, generally not being active at all in greater dilution than 1:10 or 1:20. All the agglutinin present in a given volume of serum can be absorbed by a small volume of susceptible cells.[14] The result of this is that, when a given volume of serum is mixed with a large volume of susceptible cells, the individual cells are only feebly sensitized and no gross agglutination is seen.

In the instance in which the serum of the donor is agglutinative to the cells of the patient, the plasma of the donor on transfusion will be diluted by an excess of the patient's plasma and will meet with a large excess of the agglutinable cells. These are the conditions under which, in vitro, the minimum amount of agglutination, if any at all, is observed. In practice, in all such transfusions, as we shall show later, no unfavorable results were obtained (four instances).

When the patient's serum is agglutinative toward the donor's cells, the conditions for sensitization of the cells of the donor are much better, as a smaller bulk of blood-cells is introduced into a larger volume of agglutinative plasma. Even here, however, it is probable that only in exceptional instances can massive clumps of agglutinated cells be formed, such as are seen in the test-tube when a dilute suspension of the cells is mixed with agglutinative serum and allowed to rest quietly until agglutination is complete. There is no doubt, however, that some sensitization of the cells occurs under these conditions. It is in these cases only that phagocytosis of red cells in the circulating blood has been observed, twice by us and once by Hopkins.[15]

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[12] Ottenberg, R., and Epstein, A. A.: The Diagnostic Value of Hemolysis in Cases of Cancer, Arch. Int. Med., June, 1909, p. 467.

[13] It is possible from the work of Hess and Saxl (Deutsch. Arch. f. klin. Med., 1912, cviii, 181), that the material from some of the destroyed cells may have been used in the reconstruction of blood.

[14] Ottenberg, R.: Transfusions and the Question of Intravascular Agglutination, Jour. Exper. Med., 1911, xiii, No. 4.

We have seen four transfusions in three cases in which the serum of the donor was agglutinative to the cells of the patient. There were no untoward symptoms in any of these four transfusions. In two of the four transfusions numerous blood examinations showed absence of phagocytosis in the circulating blood. In the other two transfusions no search was made for this. Of these three patients, one, with gastric ulcer, ultimately recovered completely while the other two died within a few days of causes that had nothing to do with the transfusion (shock, following resection of the stomach in one instance, and liver abscess in the other).

We have seen three transfusions in which the serum of the patient was agglutinative to the cells of the donor. In two of these instances, already cited, the serum was also slightly hemolytic.

In the first of these (referred to previously), an intense hematuria occurred. This was one of the early cases and no observations were made as to the occurrence of phagocytosis. In the second case, one of acute lymphatic leukemia, the patient's serum was agglutinative and slightly hemolytic to the donor's blood-cells in three and one-half hours. Blood smears at the completion of the transfusion showed phagocytosis of the red blood-cells by polynuclear leukocytes. The patient died forty-two hours after the transfusion. There was no hematuria in this case, but the amount of hemolysis in the test-tube was minimal.

The third instance in which the patient's serum was agglutinative to the donor's cells was also a case of pernicious anemia. Blood-smears made five minutes and fifteen minutes after the start of the transfusion and at the end of the transfusion showed phagocytosis of red blood-cells by polynuclear leukocytes (see photomicrograph). The patient passed no urine after the transfusion, and died eight hours later. Necropsy revealed an extensive phagocytosis of the red blood-cells in the microscopic sections of the lymph-nodes and spleen.

The occurrence of phagocytosis of the red cells in the circulating blood is an exceedingly rare phenomenon and is in every instance due to injury or destruction of red cells. Aside from the present instances, it has been described as occurring, so far as we have been able to find, only in paroxysmal hemoglobinuria and in potassium chlorate poisoning.[16] Our control observations of over thirty non-agglutinative and non-hemolytic transfusions show that the phagocytosis was not due to the nature of the diseases (pernicious anemia, leukemia) in which it occurred, because among the control cases were several cases of each of these diseases with no phagocytosis after transfusion.

In the great majority of cases transfused in which hemolysis and agglutination have been excluded by tests, febrile reactions following transfusions have been entirely absent. In a considerable number of cases (twenty-one out of 128), there have been slight febrile reactions, lasting one or two days, probably to be regarded as ordinary surgical fever. In less than 10 per cent. of the cases (ten cases in 128), more severe reactions occurred, often with chills, occasionally with vomiting. In none of these cases did symptoms last more than two days. In none of them did hemoglobinuria or hematuria ensue. The occurrence of these symptoms has been variously attributed by some authors to hemolysis or agglutination, or (by German authors who studied indirect transfusion) to the transfusion of fibrin ferment.

The first two causes can be excluded in our cases. Fibrin ferment cannot be a factor because the transfusions were direct artery-to-vein or vein-to-vein transfusions; nor do the pathologic conditions for which the transfusions were done in the cases that had severe reactions throw any light on the cause of their occurrence.

The same thing is true of skin eruptions which occurred in about 10 per cent. of the cases. The cause of skin eruptions is evidently connected with the cause of severe febrile reaction, because five of the eleven cases which showed skin eruptions were in the group which showed severe febrile reactions. Two of the instances of skin eruption were cases of severe general erythema, and it is interesting that in both of these cases the blood-serum of the patients was powerfully hemolytic for the blood-cells of the majority of proposed donors, but the particular donor chosen was one whose blood-cells were not laked. It seems, therefore, as though the cause of the extensive skin eruption in these cases had some connection with the cause of the hemolytic poison, but was not identical with it.

## SUMMARY

1. Accidents in transfusion due to the occurrence of hemolysis or agglutination of the donor's blood-cells by the patient's serum, or vice versa, can be absolutely excluded by careful preliminary blood-tests. We have been able to prevent accidents of this kind in 125 transfusions.

2. The relation between test-tube hemolysis and intravascular hemolysis is close, and it seems likely that in all cases in which there is test-tube hemolysis, some intravascular hemolysis occurs. When this exceeds a certain limit hemoglobinuria results.

3. The occurrence of agglutination (between the blood of the donor and that of the patient) need not be regarded as an absolute contra-indication to the transfusion, but non-agglutinative donors should be chosen whenever possible.

4. Phagocytosis of red blood-cells by leukocytes in the circulating blood of the patient transfused is undoubtedly connected with interagglutination of the two bloods; it occurred in our series in two cases in which the serum of the patients was agglutinative toward the cells of the donors (in one of the cases the serum was also hemolytic), and it did not occur in any of thirty-five non-agglutinative transfusions in which it was carefully looked for. These negative cases included two cases with extensive urticaria and one case with severe febrile reaction after transfusion. In the cases in which the serum of the donor was agglutinative toward the cells of the patient, no phagocytosis of red cells in the circulation was seen.

5. In selecting donors with regard to agglutination, the agglutination of the donor's cells by the patient's serum is more important to avoid than the reverse.

6. Febrile reactions or urticaria and other skin eruptions occur after about 10 per cent. of transfusions, irrespective of hemolysis or agglutination, and are not due to fibrin ferment or to blood platelet destruction. These reactions, however, are never serious and the patients have done well in spite of them.

The authors wish to thank Dr. F. S. Mandlebaum for the photomicrograph.

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[15] Hopkins, J. Gardner: Phagocytosis of Red Blood-Cells after Transfusion, Arch. Int. Med., September, 1910, p. 270.

[16] Huber, O.: Changes in Blood in Potassium Chlorate Poisoning, Deutsch. med. Wchnschr., Oct. 10, 1912, p. 1923.

# A STRIKING ACQUIREMENT OF VISUALIZING POWER AND THE DEVELOPMENT OF DREAMS FOLLOWING A CEREBRAL TUMOR EXTIRPATION

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The relation of intracranial growths to mental activity is recognized as a very intimate one. Most of us are familiar with the changes in memory and disposition, the states of hebetude, lethargy and stupor, the decrease in power of attention, the so-called "dreamy states," the abnormal emotional states, fatigueability, etc., associated with cerebral tumors and their usual concomitant state of increased intracranial tension. Pfeifer[1] has recently given quite a complete summary of the mental disturbances found in these types of cerebral cases.

The relation of brain tumors to mental imagery, however, seems to have called forth but little comment.

Since 1880, when Galton made his classical study of the visualizing faculty, students of psychology have been able to classify persons in this respect. We have known that memory, that is, knowing and remembering, takes place by means of visual images, by auditory images, by motor and tactile images or by various combinations of these types—the usual method. The case we have to present represents a striking example of the appearance (reappearance probably) of the visualizing power following immediately—a matter of hours—in the wake of a cerebral tumor extirpation.

## HISTORY OF CASE

*Patient.*—Miss H., aged 22, teacher of domestic science, born in Massachusetts, of American parentage. Service of Professor Cushing in the Peter Bent Brigham Hospital, Boston. Patient comes from a cultured family; her father is a professional man. There is nothing similar to patient's trouble on paternal or maternal sides. Personal history unimportant except that twelve years ago patient was struck with a croquet mallet over the right parietal region (area of tenderness found in examination), causing a severe nosebleed. Patient does not recollect having been unconscious or confined to bed. She has always been stout since puberty. She was a student until June, 1912, when she was graduated from a college in Boston. Though the school work had been constantly heavy, she enjoyed it and was able to complete her studies more or less successfully. (See later notes.)

*Present Illness.*—Vision: Blurring of vision began in January, 1912. The retinal vessels were found to be tortuous. Her glasses were changed and symptoms disappeared until December, 1912. At this time patient complained of eye-strain. In January, 1913, she began to have difficulty in accommodation, followed by decrease in visual acuity. On admission to the hospital patient had "spells" in which it was difficult for her to differentiate people.

Paresthesia: Numb-tingling sensations began in April, 1912. First noticed in left upper extremity, beginning in hand and extending to pectoral region and left side of face. Tongue and buccal mucous membrane involved. Came in brief attacks; later immediately antedated.

Convulsive Seizures: The first definite convulsion appeared at night, August, 1912; it involved the entire body. In the beginning such attacks were repeated at intervals of a month. Later they became more frequent and more severe. A typical attack consisted of: sensory aura (previously referred to) without cry; there was an indefinite feeling of malaise and severe headache with twitching of fingers of left hand, followed by involvement of hand, forearm and upper arm, in order; loss of consciousness and convulsion of entire body; cyanosis; frothing at the mouth; labored breathing and involuntary micturition. Duration, a few minutes. Consciousness recovered in about fifteen minutes; tired and "used-up" feeling, but fairly bright.

Headache: This was severe in and following seizures. Between attacks slight occipital and posterior cervical pain, "neuralgic" in character. Some headache as a junior in college.

Vomiting: This occurred at the onset of a few attacks and was not often projectile in character; occasionally not associated with seizures. There was some nausea.

Pain in Left Pectoral Region and in Left Arm: First noticed in June, 1912, together with the numb sensations. Later the patient experienced also a severe, throbbing, burning sensation in these parts.

Dizziness: This was occasionally present when arising in the morning. Sometimes, in descending stairs, this necessitated holding on to the banister, but patient never fell. Objects at no time appeared to move.

*Physical Examination.*—Thorax and abdomen unimportant. Blood-pressure 110 (Tycos). Blood: White blood-cells, 8,900; hemoglobin, 100 per cent. (Sahli). Urine not unusual. Temperature and pulse normal.

*Neurologic Study.*—(Drs. Cushing and Bagley)—Head: Marked tenderness over right posterior parietal region.

Skin: Firm and elastic. Rather marked panniculus, evenly distributed.

Cranial Nerves: Unimportant except for,

N. II: Eye-Grounds (Dr. Clifford Walker). Fundus right eye, acuity 20/30. Disk elevated 7 D. Entirely obliterated by new tissue formation of considerable duration, under which engorged and tortuous veins and narrow arteries were deeply imbedded. A few punctate hemorrhages with one large flame-shaped hemorrhage. Peripheral fundus slightly edematous. Fundus left eye, acuity 20/40. Disk elevated 7½ D. Otherwise much as in right eye.

N. III: Right pupil larger than left. Both sluggish to light, right more than left.

Cerebrum: Frontal.—Slight disturbance in memory (of recent appearance) for names and small events. Temporal.—No aphasia; no uncinate gyrus symptoms; no hemianopsia (no constriction of form fields. Slight constriction for colors in left eye. No scotomas made out). Parietal.—(sensory) Paresthesia with attacks. Touch, pain and temperature good. Muscle sense good. No astereognosis. (Motor) Epileptic attacks. Marked muscle fatigue following slight exertion, especially in left arm. Occipital.—No hemianopsia. No visual hallucinations.

Cerebellum: Romberg negative; no nystagmus. No disturbance of gait. Some dizziness. Diadokokinesia much better with right arm. No definite ataxia, though left arm moved less well than right.

Reflexes: Superficial.—Elicited. Deep.—Knee- and ankle-jerks not obtained on either side.

Sphincters: Loss of bladder control in attacks.

Vasomotor: No changes.

Extremities: Uses left and right hands equally well.

*Operation.*—On March 28 Dr. Harvey Cushing performed a right exploratory craniotomy and decompression. A generous-sized bone-flap was turned down from the parietal region. There was a depressed area in the dura just below the parietal eminence, corresponding to the tender spot on the skull found during the examination. There was also a kind of conical protrusion of the inner table of the skull about the size of a five-cent piece extending to a fairly sharp point. The dura was fairly tense and unusually vascular. By reflecting the peripheral dura upward a definitely demarcated area of dark red appearance was seen in the parietal cortex which proved to be new growth. A small isolated island of dura was left, about 5 cm. in diameter, which was attached to the underlying tumor mass. This occupied the region of the angular gyrus. The new growth was carefully dissected from the surrounding cortex and finally delivered in toto. It was quite vascular and had a soft, pulpy consistency. At no point did it seem to invade the cortical substance. The cavity left in the hemisphere gradually filled in, so that within a short time the brain had resumed its normal outlines; in fact, tended to protrude from the dural opening. The exostosis of the inner table was rongeured away and the bone-flap replaced.

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[1] Pfeifer: Arch. f. Psychiat., xlvii, 2, 558, 1912.

*Pathologic Report.*—(Dr. Rhae). The fresh tumor measures 4.8 by 2.6 cm. by 4.6 cm. Weight, 48.5 gm. Microscopic sections made in the plane of its greatest diameter are roughly hemispherical with a slight concavity on the flattened side. Throughout the greater portion of the section there is a limiting capsule of dural tissue. The tumor itself shows a connective tissue stroma, a good blood-supply and numerous tumor-cells. The latter vary little in size. Their nuclei are oval and most of them have a distinct nucleolus. No fibrils are demonstrated in connection with them and none show mitosis.

Diagnosis: Endothelioma of the dura.

*Recovery.*—Patient came out of the ether rapidly and by 9 p. m. was in excellent condition. She conversed intelligently with those in charge of her. Discharged on the forty-sixth day following the operation with remarkable subjective and objective improvement. Convalescence uninterrupted for a number of weeks. Recently some minor epileptiform attacks.

### PSYCHOLOGIC STUDY

On the morning following the tumor extirpation one of us noted that the patient appeared to be in unusually good spirits. A little questioning revealed the fact that she was quite excited over the ability, which she seemed to have acquired quite suddenly, of making mental pictures of the objects and persons in the room, a faculty, she asserted, quite foreign to her previous capabilities. Further inquiry led to the discovery that she had dreamed during the night and that this dream consisted of mental images, which will be described in detail later.

Formerly her dreams had consisted only of images of the motor, auditory and tactile types. A brief statement regarding her education during the past few years will serve now to substantiate the patient's assertion that previously she had had no visual imagination.

Up to the age of 13 the patient was looked on as being as bright as her associates. Throughout her college life, however, she was signalized by her roommate and family as having an exceedingly poor memory. English was particularly difficult. She was unable to remember eight or nine lines of poetry or prose, and then but for a short time. This much was accomplished only by tedious grind and repetition. History and geography were likewise very difficult. Interest was never taken in any of these. She could at no time picture to herself kings or battlefields, and mental images of cities and landscapes were unknown to her.

Mathematics was perhaps less difficult, but she never was able to visualize the problems. Her favorite studies were chemistry and biology, because, she explained, in these sciences she was able to see and use her hands in her work with the subject material. The solution of each problem, as it arose, was more a matter of physical exertion than a mental effort with abstract data. She liked the practical rather than the theoretical, the mechanical more than the literary.

In memorizing her work, a chemical formula, for example, she would start with one group and then reason out what the opposing groups should be. In drawing a structural formula she had no mental picture of it, but accomplished her task by remembering chiefly the movements of her hand. Her closest associate described her as "a freak all her life, lacking in some things and ahead in others, though never unusual enough to attract the attention of outsiders."

Taste and smell memories had always been keen—in fact, too acute at times, to the patient's discomfort.

Auditory images were frequent and distinct. Motor and tactile images as well were constantly good it seems.

About one and one-half years previous to her admission to the hospital the patient studied psychology. In the course of the class work she was led to scrutinize her ability in imagery. To her great astonishment she found that her classmates differed from her essentially, in that they could visualize and she could not. When told by the instructor to describe the mental images formed after the word "fire-engine," she enumerated only the sound of the gong, the clatter of the horses' hoofs and a rushing feeling. She could picture nothing of the horses, engine, men or streaming smoke. In recalling a flower, a rose for example, she recollected only "the feeling of smoothness against my cheek and the pricks from the thorns."

Drawing had always been difficult. In trying to sketch a maple leaf she remembered the sharp points of the leaf by the feeling of pricking and the general outline by the position of the fingers surrounding it.

In traveling her parents had noticed that she usually carried a collection of photographs. These were frequently inspected. The patient explains now that at no time was she ever able to recollect the faces of even her father and mother. In thinking of them she felt obliged to look at their pictures. For the scenes of her home she likewise had no mental imagery.

Novels, it seems, had very little attraction for her. She described them as dull and uninteresting, particularly the descriptive passages. Throughout her college life, at least, motor, tactile and auditory images appear to have played the most important rôles in memory.

These examples, corroborated by instructors and family, afford some idea of the subject's mental imagery during the several years preceding the cerebral operation. With the tumor extirpation the readjustment rapidly became apparent to the patient herself, first of all, and then to the examiners in charge of her. The development of the new type of imagery, moreover, was strikingly definite. Within a short space of time she could picture to herself flowers held before her, differentiating correctly the various shades and outlines. A book held before the eyes could later be visualized in all its details—binding, title, decorations, etc. A doctor, on leaving the room, was recollected in pictures of form, clothing and expression. Her pet dog, which had not been seen since admission to the hospital, was now pictured clearly, to her great astonishment and pleasure.

One afternoon when we entered her room together she enthusiastically exclaimed:

"Oh, I have had such a wonderful new experience! My nurse has just been reading a book to me. Let me tell you about it. . . . For instance, Miss M. was reading about a row of houses (description formerly bored her greatly, as noted before) which were so crowded together that they squeezed their bay windows out in front, and their living-rooms so narrow that they resembled parlor cars. I can see these houses with their bay windows perfectly now. And the parlors—why, I can see the car interiors with their rows of windows and their easy chairs, and even the dust on the window-ledges. Yes, I can see the colors perfectly." The images, however, did not appear to be overdistinct. Their intensity corresponded, apparently, more or less closely to the visual impressions.

### STUDY OF THE DREAMS

The psychologic development of this interesting case follows two paths. The first points to the past; the second points to the future. They both start from the patient's dreams. As has been mentioned, the night following the operation the patient had a vivid visual dream. That it was visual struck her with astonishment. At first she repeatedly said she could not remember ever having had such an experience before in her life. After several days of consideration of her newly acquired visualizing capacity, however, it was found that this first memory, or lack of memory, was misleading. She recollected that when she was about 8 she remembered seeing a girl with red hair on a bridge with a broken rail which sagged in the middle, and thinking at the time that she had seen it before. Since then she has "remembered" the occurrence, but could not visualize what it was about. She can remember visually very well now going to a shoe factory (before she was 8) and seeing the long bench on which the workmen cut out the leather. But she cannot visualize a "memory" of anything happening after that time. While she is unable to recollect actual occurrences of a visual nature since 8, she nevertheless can imagine, visually, persons and places which she must have seen. This is interesting from a psycho-physiologic point of view, since the patient's vision was always good up to the present illness, notwithstanding the fact that she had no visual memory or imagination.

The second path we wish now to follow concerns itself with the development of the dreams in significance and complexity. In her first visual dream the patient thought she saw her physician, a trunk and a gray wall. The picture was without color, other than being in black and white, like a photograph. It also had no action.

According to the Freudian theory of dreams, a dream is a symbolical manifestation of a repressed wish—it is a hallucinatory wish-fulfilment. Is that the case here?

Questioning the patient brought out the fact that she regarded her physician as her savior. She felt that she was rapidly approaching a fate, perhaps worse than death, and her one forlorn hope lay in this possibly successful operation. She said, "There was nobody I'd rather have seen than Dr. ——" (naming her physician). Several other associations must also have operated to bring a doctor to her mind. In the first place, her father was a doctor — the author of her being. In the second place, the physician to whom she had been taken for consultation diagnosed her condition correctly, and it was at his request that the operation was performed. Thus this image of her dream was at least triply determined by weighty determinants — weights having the significance of life and death, bodily and spiritually. Here another law of dream formation seems fulfilled, the law that single elements of a dream are overdetermined, that is, a number of motives unite to produce a single psychic effect.

The desire in this dream is undisguised. In this respect it is like the dream of a child. She wanted to see her deliverer and so she did. She wanted to go home and so she saw her trunk. Distortion comes in dreams only when what is wanted has to be concealed for social, ethical or other reasons. There was a slight repression, however, even here. Without this there might have been no dream. It is obvious that while she might properly desire to see the man who had saved her, she would have to repress that desire since he would be too busy to come merely to gratify her in letting her look at him. Thus here a slight ethical and social reason constrained the patient to repress her wish, which then fulfilled itself at no expense to any one, in a dream image. As a visualizer the patient was a child again, and dreamed like a child of just what she wanted. But as a visualizer she grew very rapidly, and, as she did so, her dreams grew more distorted, more obscurely symbolic and expressed more fundamental desires.

The second dream was somewhat more complicated, and in part a very interesting symbolical revenge. One of the doctors said she looked like a tomboy with her head shaved. She resented this a great deal, as she later admitted. She felt chagrined, she asserted, at having a man tell her she lacked in feminine attributes. That night she had her revenge. She dreamed that the offending doctor was a child, in a very lacy gown with lots of pink ribbons and bows. Here one is immediately struck by the increased complexity of the dream. It riots in color and form and has a conscious emotional content, which serves to distort it and thus to disguise its fundamental significance.

A number of possible wish fulfilments are manifest. The patient revenges herself against the offending doctor by making him look ridiculous. She also places him in her power where she can train him and make him do as she desires. In this way, perhaps, she can teach him better manners as he grows up. Again, in picturing a child she demonstrates to herself that she does not lack in fundamental feminine attributes and capacities. Again the dream is childlike in its clarity. Here manifest and latent contents are almost identical. A short conversation with the patient would convince almost anyone that she was the personification of the *ewige weibliche*. As many believe, the fundamental desire of such a woman is to have a child. Here the desire appears to be almost openly gratified, the only concealment being a slight displacement of affect. The element of ridicule is emphasized at the expense of the deepest desire—the desire for a child itself.

What is apparently the fundamental law of dreams, that is, dreams are wish fulfilments, is thus followed in both dreams recorded above. The law of dramatization is also exemplified, not only in these two dreams, but in all that follow. This law states that dreams are like pictures and that ideas have to be expressed dramatically.

The law of condensation—many motives being represented by one image—is satisfied here also. Thus the dream appears to be a compromise formation. The images selected are those which will satisfy at the same time many more or less divergent motives.

The next dream is far more complicated. The patient dreamed she was in a large house. When she entered the living-room, which was very large, she saw a group of people sitting before a fireplace. One was standing, a man, an intimate friend. For a moment she debated with herself as to whether she should show her real feelings or repress them because of the others present. She decided to act as she felt. She ran up to this man, greeted him joyfully, put her arms around his neck and kissed him. At this point she perceived the shocked look on the faces of the others, but she did not care. As he also did not appear to care, she took him by the hand and ran with him into the different rooms, all over the house. Then she awoke.

When the patient started to tell this dream, she hesitated. She finally said she would tell part. In the end she told all. The portion she intended to leave out concerned the kissing. The man was an old and most intimate friend. It grieved her because he had failed to inquire how she was, though he must have known about the operation. The day following the patient called out gleefully, "Do you wonder I wanted to hug him?" and showed a fat letter she had just received from the man of her dream. In this dream we see for the first time an excellent opportunity for the fourth law of dream formation to manifest itself, that is, the law of secondary elaboration. According to this law the dream itself is never so rational or consistent as it appears to be on recalling it. The dream is elaborated and rationalized in becoming sufficiently conscious to tell. One can never be sure how much of the final form of the dream is thus due to this factor. The first two dreams of the patient were severely simple. It seems highly improbable that there might be much elaboration in relating them. From the third dream on, however, the dreams are all so rich in material and so complex in form and significance that they give excellent opportunity for secondary elaboration.

Here we have a dream, furthermore, the hesitation in telling of which manifests a consciousness of the tendency to repression. The significance of the dream, as showing her affection and desire for the man, was not fully realized, although it certainly was partly felt. As the patient was not under obligation to endure psychanalysis no questions were asked. There is, of course, probably much more symbolical significance to this dream and to the dreams following than we can elucidate here. For any who may be interested in carrying further an analysis of this type the Freudian literature is recommended, especially Freud's *Traumdeutung*.

The night following the last dream cited the patient dreamed she was in a hole trying to get out. She took hold of a large stone—like a monolith—but it rolled over onto her, pressing her to the ground. It did not hurt her, however, and soon her "friend" (her dream lover) appeared and helped her out. Then she fancied she was on a street where there were a great many public buildings, especially churches.

For the benefit of those who may wish to try their hand at interpretation, the following dreams will be reported although no attempt will be made here to analyze them.

The patient was in a long and narrow room at night. The "friend" of her dream was there. She was on an operating-table having her nose examined with an ophthalmoscope. She could hear the doctors talking about her, but could not understand what they said. She was quite puzzled at their using an ophthalmoscope on her nose. She tried hard in the dream to find out what they were after. There were many doctors about and she could see them very distinctly. They all appeared to be quite unusual and peculiar in many respects. One in particular wore a very short beard. He looked extremely funny. The doctor had dark eyes, with quite conspicuous pupils, that is, the pupils were very large. The patient found these eyes interesting. At first she felt somewhat suspicious, but later they gradually gave her a sense of confidence. The nose was rather small, the features regular; she does not recollect the clothes. The first thing that the patient noted was the beard, then the eyes were seen, and finally the man as a whole.

The next night the patient dreamed she was coming from a room at the end of the hall. Near the stairway she met one of her college instructors. He presented her with some tea-leaves and asked her to make some tea. She descended some stairs, a long flight with winding railing. She saw the paper on the wall, the white treads, the mirror, and an old fashioned camphor chest, mahogany chairs, etc., exceedingly distinctly. Then she passed through her father's private office, seeing its details very clearly. On reaching the dining-room she found things rather muddled. It seems she could not accomplish anything. She endeavored to gather things together to make tea, but as fast as some were collected others disappeared. She saw a great accumulation of fancy and odd cakes. Some in particular were especially distinct. There were "platters and platters of things to eat."

In another dream the patient needed some sort of an operation on her ears. The operator was a man to whom she had been going for years for her ears. It was icy outside. She met a person whom she did not know, at first, though he looked familiar. She finally recognized him as a man her physician had taken into her room the day before. On the way to the office she went to her grandmother's house. Here she entered a brick-paved entrance hall different from anything she had ever seen before. Then she journeyed to the doctor's office. There were so many people waiting that they had to enter the inner office in groups. The patient was especially interested in one man with a child. "He had a rather sweetish type of face," she said, "and was tall and fair." The child was 3 or 4 years old. The man first spoke English, but fearing to be overheard he later conversed in German. She was much interested in him. Finally she entered the inner office, but the doctor was not there, and his son treated her instead.

After acknowledging that she had had a terrible recurrent dream, previous to the operation, which had stopped with the tumor extirpation, the patient could not be induced to tell its nature. She said it did not concern visual images, however. With this she asked to be excused from further questioning. The study necessarily stopped here.

One of the most interesting points relating to this series is the increasing complexity of the dreams as they appeared. It seems as if the dreams were being utilized for ever more and more significant symbolization. Simple gratitude and a desire to go home characterized the first dream, while love and marriage are symbolized in the later ones. It is interesting to note how dreams and visual imagination are probably in the service of the desires. Unfulfilled wishes of the day are satisfied at night by symbolic creations. The restoration of the visualizing capacity simply affords the person another method of presenting to herself her various wants.

It seems as though there must be some significance in the order of the dreams. First gratitude for her life appears, then a child, next a lover and then churches picture themselves in her dream-life consciousness. Is this not also the order of her real desires?

The problem of where the memory of the "lover" was before he appeared in the dream is very interesting. That the material, so to speak, was there for use in visualizing him, is proved by the fact that he had not been seen for some little time before the operation and not at all since. The image of the dream, therefore, must have been created out of material already present. Previous to the removal of the tumor, however, this material was not available either for dreams or visual imagination. Visualizing, perhaps, was actually done, at moments, but it was not sufficiently connected with the other thought processes constituting the ego-consciousness and so it was not remembered. Thus there apparently was some kind of dissociation between particular visual images and other images.

Regarding a possible physiologic explanation of this psychologic change in mental imagery we have little to suggest that is satisfactory. We know that functions of the various parts of the brain may be held in temporary abeyance, so to speak, by pressure—the so-called increased intracranial tension as well as the immediate neighborhood relationships. Following tumor enucleation, abscess drainage, and palliative decompressive procedures we are wont to expect amelioration of not only the headache, vomiting and lethargy, but also of the changes in memory, in attention, in emotions, and so on. What is more, we know now that the finer objective findings may alter rapidly in much the same manner. In cerebellopontine growths, for example—endotheliomas which may have no immediate connection with the cerebellum itself—where equilibrium and general muscle coordination are much disturbed, we are aware that often these symptoms may rapidly diminish in intensity following successful extirpations. A further demonstration is offered by the interesting charts which Dr. Cushing and Dr. Walker are gathering in a detailed study of the visual fields before and after cerebral operations. These show surprising enlargements of the form and color fields and increases in visual acuity, some changes even within twenty-four hours.

The rapid reappearance of visual imagery, then, as noted in this case, has clear-cut analogies in other aspects of cerebral pathologic physiology. Just why there should have been a selection for visual imagery alone, however, is not so clear. Auditory and motor images apparently showed no changes in intensity before and after the surgical treatment.

Starr thinks that the visions of delirium are probably produced by irritation of the visual area of the cortex. Irritation, we know, of the occipital cortex can produce forced revivals in consciousness of visual memories which may consist of actual images. More or less extensive lesions in the occipital cortex, on the other hand, are attended by losses of visual memories. While the endothelioma here occupied a parietal lobe site, it is conceivable that either neighborhood pressure or general tension factors may have inhibited, temporarily, this occipital lobe function.

We wish to express our gratitude to Professor Cushing for permission to investigate and publish a report of this case.

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# HYPERTHYROIDOSIS OF INTESTINAL ORIGIN

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The pathogenesis and disarrangement of the internal secretions and defective coordination between these secretions and the nervous system which constitute hyperthyroidism or, when they are in an extreme state, Basedow's disease, are still veiled in obscurity. Whatever the internal disarrangement of a chemical or neurogenic nature may be, it constitutes, for the present, one of the mysterious problems of pharmacology, as well as of physiology and pathology.

When Basedow first published the symptom-complex in 1840, which has since retained his name, he described three classical signs as characteristic of this condition: first, exophthalmos; second, enlargement of the thyroid, and third, tachycardia. At present we could probably safely add two more frequent conditions. These are muscular tremors and disturbances of the gastro-intestinal tract, particularly diarrhea. The diarrhea has since then always been regarded as a consequence of Basedow's disease and I fail to notice in literature that anyone has reported diarrhea, or more precisely, any anatomic change in the gastro-intestinal tract as preceding the classical symptoms of Basedow. Robert James Graves, who worked over the studies of Basedow and confirmed them, nowhere states that a typical Basedow may follow years of gastro-enteric abnormalities. We have as yet no exact physiologic, pharmacologic or pathologic test for the existence of Basedow's disease in its incipiency—conditions which are more properly called "thyreoses"; when there is excessive function of the thyroid, the condition is called hyperthyreosis; when diminished, hypothyreosis. I should suggest a third idea where the thyroid secretion is not quantitatively diminished nor increased, but chemically altered into a secretion containing different chemical substances from the normal. I designate this as *dysthyreosis*. No one denies the facility of the diagnosis when the classical symptoms are pronounced, but usually when such a state of the various organs exists, there are already extensive pathologic changes in most of the internal organs.

In the present state of our knowledge we have principally two views which, though indefinite, might be stated as attempts to explain the internal disarrangement of the secretion of ductless glands and the disturbed reciprocal coordination of nerve-cells with these internal secretions. One is the view held by Moebius that the thyroid is at the bottom of the entire trouble. The other is not definitely associated with any clinician's name, but it is a view which maintains that the thyroid is only secondarily involved and that some other nervous or chemic deviation from the normal has preceded the thyroid abnormality. That pronounced cases of hyperthyreosis, even with exophthalmos and slight enlargement of the thyroid and tachycardia, have been observed where surgical removal of parts of the thyroid could reveal nothing abnormal in the gland itself, is suggestive of the possibility that the thyroid may be secondarily affected.

In a recent article[1] von Noorden describes remote symptoms of a nervous and muscular derangement consequent on intestinal disturbances and even goes so far as to suggest that his associate (Eppinger) has isolated a bacillus from the intestinal contents of such sufferers which is suspected of being the cause of the whole difficulty.

McCarrison's results are mentioned in THE JOURNAL[2] as follows:

> Having shown in the course of his researches on the etiology of endemic goiter that the infecting agent of this disease exists in the intestinal tract and that a plentiful amebic infection was present in this situation in the vast majority of all cases of goiter in Gilgit [India], McCarrison has been engaged in endeavoring to cultivate amebas from the feces of sufferers from this disease. During the course of this work he was struck with the constant character of the bacillary growths which appeared in the medium employed. This medium was the one recommended by Musgrave for the cultivation of amebas. The vaccine employed was, therefore, a composite one and contained organisms capable of growth on an alkaline and feebly nitrogenous medium. This vaccine was administered in selected cases in doses of from 150,000,000 to 350,000,000; the inoculations were made at intervals of from seven to ten days. The results obtained were most gratifying.

Recently Sasaki produced enlargement of the thyroid by feeding normal rats with feces of other normal rats, and he also produced thyroid enlargement by the subcutaneous injection of rat feces. These experiments are quoted from Julius Bauer.[3]

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[1] Von Noorden, Carl: Intoxication Procceding from the Intestines. Especially Polyneuritis, THE JOURNAL A. M. A., Jan. 11, 1913, p. 101.

[2] McCarrison's Researches on Goiter, editorial, THE JOURNAL A. M. A., Aug. 10, 1912, p. 449.

We may interpret these quotations that intestinal abnormalities, though long recognized as a consequence of hyperthyroidism, may also be a cause, even if we limit ourselves to the conception that a live microbic agent is necessary to bring about this effect.

I wish to report three cases in which a chronic colitis of ten, eighteen and twenty years' standing had preceded the symptoms of hyperthyroidism. Two of these patients had been in Carlsbad for the relief of their colitis and one had been operated on, a partial thyroidectomy having been performed with only very transient relief of the symptoms. Naturally it would be desirable if we could find a method of determining when and how a colitis or enteritis is the cause and when it is the result of hyperthyroidism. Unfortunately, we are still lacking biologic and chemical tests for ascertaining the relation of these two states. I had personally hoped for such a test from the research of Dr. Reid Hunt, working in the Department of Pharmacology of the United States Public Health Department, but Dr. Hunt's acetonitril reaction has not proven of diagnostic help. I quote his own words from a letter to me:

> I do not think that the acetonitril reaction has at present any value for purposes of diagnosis; it does not seem to be constantly obtained even in marked cases of hyperthyroidism. I hope, however, it contains the germ of a method which may be developed into one of use.

Perhaps as important a conclusion as any can be deduced from the fact that treatment directed to the intestine is more efficacious than treatment by thyroidin, antithyroidin, or by Beebe's antithyroid serum, and in these specific cases even more effective than operation on the thyroid. When the original causative process is in the intestine, particularly in the colon, there is no treatment like lavage of the colon with irrigations of 1 per cent. solutions of ichthyol. As much as 1 liter may be used in persons having a large colon and half a liter in persons with a small colon. I have also found that the *Bacillus bulgaricus* in pure liquid cultures administered for a long time reduces the tremor, as well as the headaches and insomnia.

I hope to furnish a more complete report when the cases which I still have under observation are more carefully studied. Treatments of various kinds had been administered in all three of my cases. One patient had gone through a rest-cure of ten weeks with electric, dietetic and medicinal applications. Another had been in a sanatorium for two months and had taken bromid of quinin and ergot for six weeks, with varying effects. Both of these had taken antithyroidin, but never were free from headaches, insomnia, tremors and tachycardia except when at perfect rest. Whenever they resumed their duties their symptoms returned. I kept them in bed three weeks, also, but on a meat free diet and colon irrigation and symptoms gradually abated. One patient at the date of this writing has been free from headaches, tremors, and insomnia for six months, though at times he still experiences tachycardia if he exerts himself in warm weather. A second patient has had no tachycardia that she knows of for a year, sleeps well and appears normal, excepting an occasional attack of diarrhea, which has been traceable to errors of diet. The third patient is still under observation, but is progressing so satisfactorily that, although he is a busy physician, he has had only one attack of tachycardia in nine months while attending to his professional and scientific work.

| | | Average Pulse |
|---|---|---|
| Case 1. | Before treatment | 120 |
| | Last six months | 78 |
| Case 2. | Before treatment | 106 |
| | After one year | 80 |
| Case 3. | Before treatment | 100 |
| | Last four months | 74 |

I still advise continuance of cool needle-spray douches, strict diet, twelve hours' rest a day and one colon irrigation every six to ten days in these patients. One patient, however, has not resumed irrigation of the colon for five months and has remained sufficiently well to attend to his work. When we remember how unpromising purely internal and physical treatment of the thyreoses has been, these results of this special therapy are sufficiently favorable to warrant a continuance of it in the special types of thyreoses in which it appears indicated.

Further studies will be made to throw light on the ideas held by McCarrison, von Noorden and Sasaki, namely, to determine whether a specific microbic inhabitant of the colon is either directly or indirectly the cause of this special type of thyreoses. The chemical and bacteriologic character in all of the evacuations of these cases—I mean the study of the feces—will be reported in a future communication. But I may premise my future report by stating that no specific bacterium or protozoon has been discovered by us that enabled us to reproduce successfully the Basedowoid symptoms and signs experimentally on animals.

Read and Charles Streets.

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# EFFICIENCY IN NURSING *

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This title is intended to describe the much-neglected field of the economic side of ward nursing, especially in the larger hospitals. Recent magazines are filled with articles discussing "efficiency" in laying bricks or handling tools, and "get-together" principles are the order of the day, but one looks in vain for any serious discussion of the importance of efficiency in the nurse's routine or any "getting together" between the architect who plans the clothes closets, pantries and other ward accessories and the nurses who have to walk endless miles between them in the course of their routine work. Mr. Taylor has shown us how many unnecessary motions the bricklayer makes—how often he bends his back and moves his arms to lay a single brick. Does any one know how many unnecessary steps the ward nurse takes or how often she bends her back or lifts heavy weights? What we do know is how tired and worn she gets when the service is heavy, and how many hospitals, from various causes, have inadequate nursing service, whereas a little intelligent direction would save enough energy in the aggregate to amount to the services of several additional nurses.

Having for some time had opportunity to observe these problems in several large hospitals, both municipal and privately endowed institutions, I finally began to gather statistics. In stating them I shall purposely omit names, in order to avoid the implication of any personal reflection. As I have been unable to find reference to any such facts elsewhere, they will be given in some detail.

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[3] Bauer, Julius: Fortschritte in der Klinik der Schilddrüsenerkrankungen, Med. Klin., 1913, No. 5, p. 146.

* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

I first tried having the nurses wear pedometers in several hospitals. In one I found that the day nurse walked seven and one-half miles a day, in others an average of five and one-half miles. This, in addition to all the stooping and lifting the nurse has to do, besides carrying heavy weights, involves an excessive expenditure of foot pounds of energy. In one hospital in which the wards are so long that the furthest bed is 120 feet distant from the ward kitchen tables, it was the custom to carry the food trays separately to and from each bed three times a day. When all patients were bedridden, as often happened in the twenty-six beds, it was a matter of simple addition to show that some one, usually a nurse, had to walk two miles per ward each day merely to serve meals! The very heavy wooden trays were found to weigh 8 pounds each, and when loaded with heavy ward crockery and with food and drink each tray weighed 15 pounds. Some one, therefore, in each ward had to haul a considerable weight two miles. An additional consideration was the minor factor of so much parading up and down a ward where quiet should be an essential in the treatment of the very ill. I suggested obtaining wheel trucks adapted to carry a dozen or more trays at a trip. I was met with the objection that "the food would reach the patients cold." At this I was surprised, as such trucks are in use in some places, although many large hospitals are without them, partly, no doubt, because no one ever suggested to the architect that he provide space for them when not in use. Experimentally, therefore, I took a common wheel stretcher, placed eight trays on it and, watch in hand, compared the time of delivery with the serving of a like number of trips individually. The entire time consumed in serving eight patients and returning to the kitchen was only two minutes with the truck and ten minutes without. This disposed of the cold-food theory. The distance traveled was 74 feet as compared with 240 feet. Since that time trucks have been used and the comment which reached me from a ward maid, who in this case assisted in the meal service, was: "Bless the man that invinted thim thrucks—sure the corns is all gone off me hands since." The wooden trays had absurdly high backs, so I had two pounds of wood sawed off from each tray.

The bed screens weighed 31 pounds, and three were required to surround a bed. In accordance with the deep-rooted objection common to many training-school superintendents to accumulating anything in the wards intended to promote the true comfort of the patients, these screens were stacked in the hall when not in use. If a man in the furthest bed had to use a bed-pan, some one had to haul a weight of 93 pounds to and from him and then, of course, carry the bed-pan to and fro, thus walking in all about 480 feet. After some insistence I succeeded in having some of the screens left at the distant end of the ward, where they would be reasonably at hand when needed.

In the books on physiology and therapeutics it is taught that water is a good diuretic and promotes activity of secretions, lessening constipation, and some of the more thoughtful of us advise patients to drink it between meals! How many hospitals have drinking water at hand in the wards? In one hospital I found that a few water-coolers in use in July and August were all stowed away by the nurses for the winter in a storeroom in the attic because the Powers that Be thought that they encumbered the ward and, besides, the poor thirsty patients sometimes spilled a little water on the floor! Of course a thirsty man may call a nurse to bring him a glass of water when she is not too busy, but if she has to walk a block or two to get it, she is not likely to do it very often. To show that this is no exaggeration, I went into a tuberculosis ward where the faucet and the pantry and the patients were all in widely separated localities. Here the tumbler had to be taken to the faucet for disinfection and then replaced on a very remote pantry shelf. I asked a nurse to make believe a patient was thirsty and get him a drink. I followed her around, pacing the distance traveled, and she walked 364 feet. At this institution the trustees finally ordered water-coolers in each ward and an individual tumbler to be kept accessible for each patient. It is noteworthy that such suggestions never come from the training-schools.

There is usually a single table at one end of a long ward to which the nurse periodically carries the bedside note-blanks to be written up several times a day. How many feet of useless tramping would be saved by having a second table in the center or opposite end of the ward! The patients' bedside tables are all placed on the same side of the bed, regardless of the fact that one may have hemiplegia and be unable to reach the table with the unparalyzed arm.

There is a very good municipal lodging-house for tramps in New York City. In most large hospitals the medical wards are precisely like the dormitories of this lodging-house. There is a bed, a small table, and a more or less (usually more) uncomfortable chair for each person; nothing else is kept in the ward or within easy access to make a patient *comfortable* in bed. There are no cranes at the head of the bed for a heavy patient, or a stiff-jointed one to pull himself up by, or for a heavy, fat patient to lift himself easily on to a bed-pan. Inquiry usually shows that if there are any in the hospital "they are over on the surgical side." The nurses (or rather their principals), do not like them because they detract from the symmetry of the ward. There may be a few back-rests, but the best kind, which collapse when not in use and are permanently fixed to the head of the bed, are seldom found. In one hospital I discovered that portable rests were stored in a remote closet so far away that the nurses seldom had time to get them. I insisted on having them hung on hooks behind the beds. When I left the rests did also! Often a convalescent is able to sit up only long enough to eat a meal, which he does in comfort with a back-rest, but what nurse has time at the meal hour to walk a block and bring in a heavy rest to be used only a few minutes and then take it back? How much simpler to set the dinner tray flat on the patient's stomach and let him try to eat lying flat and getting more and more tired from the weight (for not all trays have legs and, when they do, they are usually too short)! If one's appetite is poor, discomfort while eating certainly does not improve it.

How many medical wards have cradles to take the weight of the bed-clothing off from swollen, rheumatic leg-joints? Ask the nurse, who says she "has heard of one in the building but it must be over on the surgical side." Her rule is to strap the bed-clothes so tight over the feet that they cannot slip, and the patient, in consequence, enjoys a more or less painful talipes equinovalgus. I produced a decided sensation in one hospital. A 300-pound woman with nephritis, incontinence, bedsores and high tension came into my wards. When lying on her back she was 28 inches across at the hips and she lay on a 32-inch-wide bed. She could not turn without landing on the floor. She needed to be turned for enemas, to have her sores dressed, and to be cleaned after incontinence. She needed hot packs. In this hospital of 1,000 beds there was not *one* for an unusually obese patient or an unusually tall one. I sent in a requisition for a 48-inch bed. A hurry call went to a department store, and the bed arrived, but was so low that the nurses were breaking their own backs in trying to relieve the patient. So we propped it up on shock blocks and the patient was finally able to turn herself without risk of breaking her bones by landing on the floor. This apparently simple innovation was regarded as so remarkable that nurses came from neighboring wards to see it!

Such an arrangement as a foot-rest to keep a patient from slipping to the foot of the bed, or to brace against while sitting in bed, is so serious a departure from training-school routine orders as to the "looks" of the bed, that, although I have ventured to hint of it, I have lacked the moral courage to insist on it!

There are many patients who cannot use bed-pans with satisfactory results. The very obese, for example, cannot. Yet very few wards are supplied with the convenient portable commodes which are mounted on casters, and when they are I find the nurses, for some reason, very reluctant to use them, although their use requires no more work and no more screens than that of bed-pans.

There are many patients who are old, feeble, or mentally dull, or mildly delirious, who in turning in the narrow hospital bed may land on the floor, unless protected. All they need is a couple of boards at the sides of the bed, fastened by tying them through holes bored in the ends. But the nurses find it easier to fasten draw-sheets over them. This method restricts freedom of motion and irritates, and I have occasionally seen a victim so tightly fastened by a sheet drawn across the chest as to have serious impairment of breathing. I do not, of course, refer to the actively delirious who attempt to get out of bed unless restrained.

All these appliances require a little thought for their use, and my experience is that unless they are kept within convenient reach they are never used, yet they add enormously to the comfort and welfare of the patient in bed. The architect usually has never thought of them and makes no provision for space in which to keep them when not in use.

There are many other details concerning efficiency, as, for instance, lack of system in the method of distributing the various things for the morning toilet, distributing medicines, etc. There should be more ward tables than are generally found. They save many steps and promote efficiency of service. The visitor has nowhere temporarily to lay a hat or heavy coat, unless he puts it on the patient's bed or on the floor. Convalescent patients need access to a table on which to lay a book or a checkerboard, if they are ever permitted anything to divert their minds from their own or their neighbor's ailments.

I do not think these suggestions unreasonable, nor do these appliances for the comfort of patients necessarily detract from the appearance of neatness of a ward, yet the modern training-school attitude is so increasingly pedagogic and so decreasingly humanitarian that I am unable to recall a single suggestion originating with the officers of a school designed to promote the comfort of patients in bed, and I know of more than one school in which nurses are reprimanded for following their natural impulse to favor the individual. I have sometimes doubled a pillow temporarily to ease the position of a dyspneic patient, the nurse telling me she did not dare to do it herself. I admit that in general the window-shades should be kept on the same level, but if a patient has conjunctivitis, photophobia and a severe headache from facing a glare of light, and the nurse dares to pull down the shade opposite, she is liable to severe reprimand. Yet in private practice, if she refused to regard the comfort of the patient in such matters, she would quickly be superseded. Lectures on bacteriology, urinalysis, voice culture and the functions of the ductless glands loom large in the up-to-date training-school curriculum, but the gentle art of making the ward patient *comfortable* in bed, is not only unpracticed but actively discouraged in many instances.

To return to the problems of nursing efficiency. Physicians themselves are often lacking in its consideration. On "rounds" nurses are kept waiting while learned bedside discussions are held over polymorphonucleosis or complement deviations, when the service is heavy, and they ought to be serving a glass of water or easing an aching limb. The doctor's routine often calls for the recording of pulse, temperature and respiration data every three hours of every patient in the ward, although perhaps not half of them require it more than two or three times a day, and some few may not require it at all. This is notably the case on the surgical side. Now three minutes per patient to take these observations, including disinfection of thermometers and writing down the three records, is a minimum time allowance if any approach to accuracy is to be expected. In a ward of twenty-five patients, four observations a day at three minutes each, requires 300 minutes or five hours. But no nurse spends this time over such work and it would require her to neglect urgent matters if she did. Is it not better to order fewer records and have them reasonbly accurate?

One great difficulty in relation to the doctor's efficiency arises from the almost purely American custom of rotating services. Whatever may be the merits of this question, which cannot be discussed in this paper, every service should have its administrative director, that is, one physician or surgeon who is continuously responsible for securing uniformity and continuity in the matters under discussion. If back-rests and cranes and drinking-water and bedside boards and tables and food-trucks and commodes and foot-rests and leg-cradles and similar appliances are admittedly useful adjuncts to treatment and comfort of patients, they should not be brought into requisition for two or three months while Dr. Jones is on duty and then hustled into oblivion the moment Dr. Smith succeeds him, who is not regarded by the school authorities as a simple-minded crank, always trying to make patients comfortable instead of giving them an excess of pills and potions.

I have heard certain extremists among those seeking to regulate the training of nurses advocate an eight-hour system of ward work, although I have heard no definite statements as to where the additional funds were to come from, which such a system would entail, or how the additional housing required could be obtained. Nor have I heard any facts presented as to the health of women as affected by their hospital course of training. Such facts, indeed, I find are not easily obtainable from training-school records. In one large hospital, however, where the work is so arduous that the health statistics of the nurses may be regarded as showing the extreme to which their energies may be taxed, I obtained the following data:

Total number of nurses in the school—119.
(All of these nurses were ill for at least one day.)
Total number of working days in 1912—41,650.
Total days of illness—583.
Percentage of days of illness—1.5.

Among the illnesses were eight cases of scarlet fever, seven of diphtheria, three of measles, one of typhoid fever and three of German measles, which collectively account for 433 days of the 583. As these infections were not, strictly speaking, due to overwork, it is fair to deduct the nineteen nurses having acute infections from the total of 119. This leaves 100 nurses with only 150 days of illness, or an average of 1.5 days of illness per nurse for the entire year. It thus appears that the average is extremely low, and compares very favorably with similar statistics of any large group of young working women, as, for example, factory employees, although the working hours of the nurse were between ten and twelve, as compared with the eight or nine of the factory employee.

In conclusion, I would make an earnest plea for the study of greater efficiency in nursing in order to conserve the nursing force which we have in any hospital, and for the greater use of common-sense appliances for promoting the comfort of patients in bed.

If the nursing system of to-day is being overweighted with theory and pedagogy to the detriment of more legitimate practical and humanitarian aims, which unquestionably is true, physicians have no one to blame for it but themselves, through their lack of cooperation and increasing tendency to permit training-schools to be managed by extraneous influences, manipulate their own curriculums and arrogate the responsibilities which are primarily the function of the doctor.

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# THE TRAINED NURSE OF THE FUTURE *

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With the ever-extending specialization of modern society, certain social groups take on the character of human commodities. They do not produce, but they conserve values. To these groups, the profession of nursing women belongs.

These human commodities are created, in the course of social development, by the need for personal service as between man and man and by the demand that this personal service, in degree of the exigency of human need, shall be of expert quality. Some particular agency of social service is frequently employed for the immediate supply of such expert assistance. In the case of the trained nurse, the hospital has served as her creative agent. Not unnaturally, the agent of creation becomes or attempts to become the maker and the molder of the thing created; and not infrequently it comes to regard the creature it has incubated as its own particular perquisite, and designed specifically for its own use. This proprietary relation, the hospital, as the foster-mother of nurses, with the exercise of something of the maternal instinct and with more of the exercise of the instinct of self-perpetuation, has endeavored to assume.

But somehow or other in the unfolding of the biologic plan, the human creature tends to get away from his creator, to say nothing of his inevitable assertion of his independence of the parental agent of his creation. And what is true, as a matter of biologic development of the individual, is true of the group. No social condition of the group can be ultimately fixed, no economic principle of its service can be permanently established, in the fixation or the determination of which the welfare of the group and of all the parties in interest in the life of the group has not been fully and fairly considered.

In the segregation of this group of human commodities which constitutes the profession of nursing, there are four parties in interest: first, the public that it serves; second, the hospital system that it serves; third, the medical profession whose essential handmaid it is, and fourth, the group of nursing women itself. Since the greater includes the less, it would seem that the problem might be reduced to simpler terms; to two factors, indeed, society and the nurse. But in a society so highly specialized as our own, interrelational group interests arise and, therefore, in the present instance, it is essentially a four-factored equation with which we are forced to deal. Perhaps no other group of human commodities has to sustain so many relationships in its service as does that of the trained nurse. At the present juncture, each one of these relational factors is seeking to exercise a dominant influence in the development of this human commodity group. Social welfare societies, hospital associations, medical associations and nurses' federations are all busy with the question of the graduate nurse.

So vital and yet so unseen is the force of the social movements which express themselves from time to time in what we term public sentiment, that they are hard, indeed, to reckon with. In America, public sentiment is a force which finds expression slowly. It has taken the public a long time to learn the values of the trained nurse as a social commodity, as the agent of an important social service; a tardiness to be traced to the fact that nursing is only a differentiation of domestic duty. But there are many evidences that the public is beginning, not only to appreciate, but to utilize, in many different directions, the services of the nursing profession, and that this type of human commodity is a definite answer to a very definite social demand.

The most actively dominant of all the parties in interest in the development of this social group has been the modern hospital, and hitherto there has been adequate reason for its influence. It has been the sole agent of the production of the trained nurse; it has created and controlled the opportunities of training. The product of its early efforts represented new and real social values, as contrasted with the nurse of earlier days who, like Topsy, was a social orphan and "just growed."

The profession of medicine, which has been simply the co-employee, with the nursing group, of the hospital of the past, has exercised but an advisory influence over the birth and training of the nurse. It has been the habitual critic of her development, and very pertinently so, because the physician is ultimately the only competent judge of the fitness of the nurse and the chief sufferer, held responsible to her employer, the patient, for her

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* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

possible unfitness. Yet as a purveyor, only, of the nursing product of the hospitals he has had to take, and often to train anew, just what he could get at their hands.

Up to a very recent day this human commodity, herself a social unit, not forming until lately into a definite social group, has been the most helpless and, often, in the measure of her own unfitness, the most hopeless factor in the evolution of her own class. Invited into a newly made calling, poorly prepared for her responsible undertaking, often imperfectly trained in its essential duties, hurriedly pushed out into an alien world; a half-baked social product, thrust into the fulfilment of an uncertain social need, it is small wonder that she has had a hard time finding herself. The instinct of the eternal feminine for sacrificial service has been her sole saving grace, the guiding light of her star of undoubted destiny, leading her on to the realization of her important social function.

Suddenly, as human progress goes, this group of human commodities to which she belongs finds itself in large, active and growing social demand, and with the growth of that demand, the relation of the several parties in interest, in the process of the development of the graduate nurse, has undergone a radical change.

Primarily created in answer to the demands for hospital nursing, the service of the graduate nurse has extended readily to the private homes of the well-to-do; but of late it has gone far beyond this limited range of usefulness. Trained nursing has come to be regarded as a utility which should be secured for the uses of all classes of the people. Its field is widening out beyond the lines of a purely personal service into the broader range of social service in many and varied forms.

To-day trained nurses are in the offices of physicians, assisting in the care and ministering to the comfort of temporary patients and in the conduct of private laboratories. They are becoming the professional aids of the doctor in his daily duties.

Trained nurses are in the public schools, and rapidly the system of health inspection is extending from larger to smaller communities. Here, as in the doctors' offices, graduate nurses serve as the immediate assistants of medical officers; they reach the homes of the children, become the sanitary advisers of their parents and are definitely engaged in bringing the principles of preventive medicine within reach of the practice of the people. In private schools and colleges and in state universities, they are appointed as residents in charge of the health and ill health of women students.

Trained nurses are employed in the great service agencies of relief in the large cities of the country. The badge of the visiting nurse, devoting herself to the sick and the suffering in the homes of the poor, is no less a mark of honor because it is coming to be a common one.

Trained nurses are becoming the effective agents of the constructive work of great philanthropic enterprises concerned with the problems of child-welfare, the prevention of infant mortality, the study of mental hygiene and the control of tuberculosis. They are employed in the hospital service of the army and navy and in the Red Cross Society throughout the world.

They are going far into the field of missions, both at home and abroad, and are ably supporting the efforts of medical missionaries.

They are enlisting in the welfare work in great department stores and manufactories, where an enlightened management finds an economic asset in the health and happiness of its employees.

Trained nurses are at work in the free clinics of city dispensaries and are doing valuable duty in the social service departments of the great hospitals.

Everywhere they are the effective agents of scientific medicine; they are putting principles into practice and are filling in the great gap between the laboratories of the schools and the common life of the people.

With this widening out of its field of private and public usefulness, with the opening up of its opportunities of social service, it is inevitable that the profession of nursing should have awakened to a strong sense of class or group consciousness—that it should be seeking eagerly to come into its own, as the determinant of its own welfare, the exponent of its own needs, the arbiter of its own relations to the hospital, to the profession of medicine and to the public it serves.

The development of this class-consciousness is distinctly shown at four points of social movement:

1. In the demand for legislation creating state boards of examiners to regulate the practice and to legalize the practitioners of nursing. While here, as in the profession of medicine, this demand begins with a desire for protection on the part of the profession itself, such laws, in their operation, are an exercise of the police-power of the state for the protection of the people from the incompetent. They may be taken as an acknowledgment of the relation of the nurse as a social servant in the state, whose capacity to serve, in a calling which involves the health and the life of its citizens, should be attested by the license of the commonwealth.

2. In the movement, inspired by educational leaders of the professions of nursing, toward the standardization of the education of nurses in America. This movement, to be undertaken by the Carnegie Foundation for the Advancement of Teaching, contemplates the study of conditions in six or more states of the Union, for the purpose of reaching some consensus of judgment in the matter of entrance requirements, preliminary training, duration and character of courses, etc. If the Foundation shall accomplish for the profession of nursing, in any substantial measure, what it has achieved for medical education in this direction, it will do society at large a notable service.

3. In the recent rise of university schools for nurses. The University of Minnesota is the pioneer of this significant movement for the better education of nursing-women. In creating a school for nurses as a department of teaching, under direct university control, in charge of the faculty of the medical school and affiliated with the teaching hospital, which is similarly owned and controlled by the university, it has led the entire world, although it has been happily followed, already, by two neighboring state universities. The significance of this movement lies not alone in the high standard of training which the university has set, but in the fact that its action tends to remove from the exclusive control of the hospital, as such, the education of the nurse. Its significance can be measured only by those who have studied the problem of the education of nursing-women from the point of view of the interest of the student in training, apart from the interest of the training hospital. The guarantee which the university gives that the student's educational interest shall be paramount and that the pupil-nurse shall not be exploited for the benefit of the hospital service sounds the note of an emancipation which could not be effected, perhaps, by any other agency.

The essential features of the university curriculum for nurses may be of some interest. The diploma of a high school of the first grade and an actual examination to determine the physical fitness of the candidate, conducted by the physician of the school, are requirements for admission. Preference is given to women of superior attainments. A preliminary course of four months is required, during which the pupil is not in hospital residence, for which course she pays a tuition fee, and which covers instruction for from six to eight hours daily, conducted in the laboratories and lecture-halls of the university, in the subjects of anatomy, physiology, bacteriology, chemistry, materia medica, English, penmanship and lettering, physical culture, hospital economics and practical dietetics—a course with which the student is exclusively occupied during the four months, thus relieving the period of subsequent hospital service of many wearying hours of evening lectures. The superior fitness of the hospital entrant for her practical duties, by virtue of her preliminary course of study, has proved itself clearly to those who are in immediate charge of the school. A two months' probation service in hospital, followed by two and one-half years of graded service and study in the wards of the hospital and the outpatient clinics, complete the course. An eight-hour hospital day and the employment of an adequate number of graduate nurses as long as may prove necessary for the proper conduct of the school are added features of the university plan. On recommendation of the medical faculty the university degree of Graduate in Nursing is conferred by the Board of Regents.

4. In the recognition that the time has come when the gauge of fitness to teach and to train students in nursing must be applied to the hospitals. A demand for the educational standardization of hospitals is making itself felt.

In the past twenty-five years the number of hospitals engaged in the business of making nurses, in the interest, primarily, of the hospital's own economic salvation, has increased to the point of real educational danger. A scarcity of matriculants, low standards of admission, overworked pupil-nurses, a deteriorated and inadequately trained output, a surplusage of graduate nurses in private practice in many communities, and a lessening of earning power in consequence of this overproduction are the inevitable results.

The scarcity of nurses, of which so much has been heard in recent years, is a matter of real famine in the quasipublic and private hospitals, which, under denominational or individual control, have been unduly multiplied. It is not a matter of famine of trained nurses in private practice. If there is any scarcity of nurses beyond the graduating lines of the hospital, it is in the higher vocations to which the practice of nursing leads. These hospitals which, like the overnumerous denominational churches of most communities, are rarely filled, maintain training-schools for nurses as a necessary condition of their own support, divide and subdivide the educational field to its serious detriment, and care for their patients at the cost of the labor of their pupils. Their precarious fortunes are, in no small part, dependent on their attracting student nurses. Even at that, these quasipublic and seldom free hospitals fall back continually, under the plea of a charitable function which they do not fulfil, on subscriptive support to make up their annual deficits. Were these hospitals compelled to employ graduate nurses and to abandon their training-schools, some of them would speedily close their doors. Undoubtedly, those which could survive would eventually be better served.

The results of this uneconomic multiplication of hospitals and, along with them, of training-schools for nurses, are seriously felt in many of the larger institutions, which are compelled to supplement their force of pupil-nurses by the employment of graduate nurses, for which the private patient has to pay as much as he would for similar service in the home. Many of the best nurses now prefer hospital practice to private employment and naturally cultivate these opportunities.

The practice, in itself, suggests a remedy for the present educational misfortunes of the training-schools. The smaller private or special hospitals with less than an average daily complement of thirty patients (not beds) should be debarred, by law, from the maintenance of training-schools, for which their service is inadequate. The conduct of standardized training-schools should be confined to general hospitals of standard capacity and equipment. Substandard schools in special hospitals should be forbidden the graduation of nurses, but should be affiliated with standardized general hospitals, which should receive and credit their matriculants with equivalences of time and service and should graduate them when their full complement of training is secured. Direct affiliation with or ownership by recognized medical schools should be a prerequisite in standardizing the teaching hospital. The schools for nurses should be under the direction of the medical faculty or should have a special faculty affiliated with the medical school, on which a number of medical educators should sit. Since the day is coming when all medical schools will be university schools, it will naturally follow, if this relationship is established, that eventually the schools for nurses in America will also be under university control. Let us speed the day!

No substantial progress can be made in standardizing the education of nurses until the commercial value of the nurse to the hospital is eliminated from the question. That it will be eliminated and that progress will be made are assured by that essential fitness of things which ultimately rules the acts of men.

In discussing the trained nurse of the future, it is not necessary to conjure up any visions of a distant day. The consummation of events which are now in progress must lead up to practical results in an immediate to-morrow. There are great and difficult problems before the profession of nursing, but it is going to realize itself in their practical solution. To standardize the hospitals which conduct training-schools; to standardize the teaching of the schools; to standardize their product by effective state regulation of practice—these are large and serious undertakings. They will require the combined wisdom of the leaders of the profession and of their natural allies in the profession of medicine.

To equalize the social availability of the trained nurse is one of the most momentous matters with which the profession of nursing has to concern itself. At present, between that part of the public that can comfortably pay the fair wage of trained nursing and that part of the public which receives or should receive its trained nursing through the medium of organized relief, there are large classes of the people who are altogether unable to meet the expense of such service or who, meeting it, are financially disabled by the drain on their meager resources.

The proposed training and graduation of women of less adequate preparation, to be known as "nursing assistants," etc., and to work for lower wages, is no real solution of this very serious problem.

The plan evolved by a committee of the American Hospital Association and presented by Dr. R. H. Babcock of Detroit is an ingenious attempt to meet the similar college connections. The University of Minnesota has gone a step further and has university education and university control of the training-school of its hospital.

Teachers' College of Columbia University has an endowment of $150,000, established for the department of graduate work for nurses.

For the smaller hospitals with suitable affiliations to insure good general practical training, there has been suggested the possibility of combinations of two or more hospitals to share the expense of securing instructors in the sciences, these teachers to give the same courses in each hospital.

Technical high schools are increasing in number, and courses in fundamental nursing subjects have been established.

A course in dietetics is given in the Springfield (Mass.) technical school. The technical high school of Toronto gives a six months' preparatory course in nursing. For the hospitals that are unable to meet high standards for training nurses there is a field too little developed, that of training attendants. The Special Training-School Committee of the American Hospital Association, which reported at the annual meeting in 1909, recommended that attendants be trained "in hospitals too small to maintain a training-school, in chronic wards of large hospitals, in special hospitals and homes for incurables." There should be, however, no confusion between the trained nurse and the trained attendant.

Physicians and the public should be made to clearly understand the difference in training; otherwise, with attendants failing to meet responsibilities which should only be given to graduate nurses, much harm will be done to the present standing of the nursing profession. No hospital should undertake the training of attendants without an adequate staff of trained nurses to provide good nursing for acute cases and to assume careful oversight and instruction of the pupil attendants.

That the demand for attendants will exceed the supply for a long time to come, I am thoroughly convinced. It is not alone the poor who will be benefited. Many well-to-do people who are suffering from chronic diseases can be well taken care of by those who have been trained in the mechanical work of nursing.

Finally, let us accept the fact that training-schools for nurses should be able to provide adequate theoretical training and practical experience. Let us make this clear to our hospital boards and benefactors, that the necessary money may be spent on our nursing departments.

Massachusetts General Hospital.

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## ABSTRACT OF DISCUSSION

### ON PAPERS OF DRS. HOWLAND, BEARD AND THOMPSON

**Dr. P. E. Truesdale**, Fall River, Mass.: There are many problems yet to be solved bearing on the education of the nurse. Her proper training and an efficient care of the sick must be accomplished simultaneously and harmoniously. The fact should not be lost sight of, however, that hospitals are founded and should be maintained for the sick. In America, particularly, this attitude is in a large measure responsible for the favorable impression which our hospitals have made on the public. If the education of physicians and nurses is to be made a paramount issue in hospitals, charitable or pauper institutions only will exist.

I wish to ask Dr. Beard what his results have been in the employment of graduate nurses for hospital work. In my somewhat limited experience I have found that the graduate nurses who seek hospital work are of two types; one represents the highest type of nurse; the spirit which prompted her to enter the nursing field was one of unselfish devotion to the afflicted. Her reasons for preferring hospital service are genuine. She makes the ideal nurse and accomplishes vastly more in the hospital. The other type is at the other extreme. She is available most of the time, and will take private work or hospital work as it happens to come. She has her diploma, and now cares only for a salary. It is always a risk to give her responsibilities, and her sense of discipline is a thing of the past. Yet a hospital superintendent who employs graduates only must content himself with a majority of this class and he and his patients should command your sympathy.

Dr. Howland sounded the keynote when he stated that smaller training-schools must meet the requirements by affiliation. It seems to me that Dr. Beard, Dr. Howard, Dr. Howland and other authorities on the education of nurses should indicate the standards of education to approach, and those training-schools which are found wanting should be counseled and reorganized instead of condemned.

**Dr. Arthur B. Ancker**, St. Paul, Minn.: The City and County Hospital of St. Paul was the first to establish a training-school in this section of the country. We started out with a two-year course, and succeeded in graduating a good many young women who have successfully practiced their profession, several of them obtaining distinction. Furthermore, it has been my observation that some of the most ardent advocates of the three-year course are themselves the possessors of diplomas that they obtained after two years of training. If only because of the advantage that accrues to the hospital, I would advocate the three years' course.

A high school or a university education, as a qualification for admission to the training-school, is desirable, but I do not believe that, primarily, it is the most important consideration. If the candidate have a good home training, industry, and ambition, something less than either of the other qualifications would do.

In the twenty-one years of the City and County Hospital Training-School for Nurses we have had but three deaths, one from typhoid fever, and two from scarlet fever. I cannot remember one of our nurses who, when she had secured her diploma, had to abandon her career because of her physical unfitness.

**Miss Louise M. Powell**, Minneapolis: I should like to give one experience at the University Hospital to show that high standards can be maintained even though it costs a good deal of money. In the fall of 1912 we had a hospital of 120 beds to open, with fifteen pupil nurses. Instead of throwing down the barriers of our high-school requirement and preliminary course and working our nurses twelve hours, the faculty gave us permission to employ as many graduate nurses at fifty dollars per month as were necessary to carry on the work of the hospital. We employed, for a period of from six to eight months, twenty graduate nurses. I agree with Dr. Truesdale that graduate nurses in the wards are far from satisfactory.

**Miss Harriet A. Hartry**, Minneapolis: The majority of the criticisms of superintendents of nurses are largely overdrawn. One is the question of orderliness in the hospital. The essayist missed the mark altogether when he said that the training-school superintendent insisted on the shades being straight even though a patient suffering from some unmentionable eye disease would suffer because the shade was not drawn down. That is not the meaning at all. No superintendent of nurses would object to a shade being drawn down, but what she objects to is lack of orderliness.

**Dr. Kate Lindsay**, Boulder, Colo.: I have been a practicing physician in a sanatorium. I see that the sanatorium nurse is not represented here to-day. While all honor is due to the hospital nurse, in the sanatorium, and especially in a tuberculosis sanatorium, a sanatorium for nervous diseases or a general medical and surgical sanatorium, you will find that if you appoint most of the nurses to treat a case by such physiologic medical treatment as massage, proper bathing, physiologic therapeutics, the use of electricity, dieting, and general management of the patient, she will find herself wanting; at least, that has been my experience. We all have our ideals. We cannot have our standards and our ideals too high.

So far as the nurse's health is concerned I believe that we need to give more instruction to the nurse as to how she can best conserve her own health. Efficiency is the ability to do work and yet not wear one's self out doing it by ordinary methods of work.

**Dr. Cleveland H. Shutt**, St. Louis: Most of us can tell the nurses what their ideals should be. The community owes something to the nursing profession in showing what it expects to hold out for the nurse after she has completed her training and education to become a nurse.

There is a movement on foot by one of the great independent foundations to investigate the various places from which nurses are graduated in the United States; I will not say trained, because there are many places where nurses are not trained, they simply work. I believe that there will be greater benefit derived by the nursing profession directly, and by the hospitals of the entire country indirectly, from this than from any other movement than has been inaugurated. We have, I dare say, in this country more training-schools for nurses which do not train nurses than there are training-schools that do train them. There are many institutions that specialize, doing only surgical work or only some special sort of work, who give at the end of a certain time a certificate "Trained Nurse." If certain reasonable standards are established and if the facilities which institutions offer for training of the nurse are investigated, tabulated and published, we shall get the right kind of women to apply for training. They will be eager to do so. No one should be more deeply interested in the question of standardizing training-schools for nurses than the nurses themselves. Their own organizations should take that work up because it is, I believe, the most practical movement toward the elevation of the nursing profession and toward giving the women who enter the profession what they deserve in return for their efforts and time spent in training.

**Miss Delia O'Connell**, Minneapolis: I have sometimes wondered if the scarcity of nurses in our well-equipped training-schools is not due to the fact that these schools insist on three years of unrequited training. I know that there are many women with high-school educations anxious to take up nursing who cannot afford the three years of training without salary. They can learn stenography in six months; they can take up bookkeeping, or they can enter a training-school for two years and three months, after which plenty of work as private nurses is available. They take no second-rate positions. They are good nurses.

**Dr. H. B. Howard**, Boston: There is one thing that I would like to say: Any training-school will succeed and find its place in the community as long as it is careful in selecting pupils with good dispositions and kindly manners and trains them so that these good points are cultivated and improved. The training-schools do for the nursing profession more, in some respects, than the medical schools do for the physicians that they graduate and throw on our community: they test out as to their physical ability, their ability to endure the work and to maintain an even manner under trying circumstances; in fact, their dispositions are thoroughly tried out. Those that have a bad disposition rarely pass. If a nurse has a diploma or certificate from even our poorest schools, as a rule, you will find she is a woman with a good disposition. I think that there has not been sufficient emphasis placed on this point, and I think that this is the reason why even the poorer schools do seem to fill the bill.

**Dr. John A. Hornsby**, Chicago: I am more convinced than ever that we are talking at cross-purposes with exactly the same intention. Dr. Beard is perhaps talking about a class of nurses who shall lead and teach in the profession of trained nurses; some of the rest of us are thinking about nurses to take care of patients, at home and in the hospital.

All our training-schools nowadays admit pupils only after they are 21 or 22 years old. Most young women finish their school training at 18; then they either stay at home and take their little fling in society, or learn stenography, or dressmaking, or go into a shop. When the young woman is 22 years old, she decides to become a nurse.

Now I wonder if we cannot compromise with Dr. Beard by taking the girl of 18 when she comes out of school, while her mind is still fresh and flexible and while she still has the habit of application to her books. Why cannot we take her and give her this preliminary course in school without introducing her into the wards of the hospital at all, say for six months or even a year, and then put her in the hospital and give her two years' training?

**Dr. Richard O. Beard**, Minneapolis: It is not women with university training that we seek; it is simply women with a good average degree of preliminary attainment. Nor are we going to take them at 18 years of age. We have put the age down to 20, and sometimes have been sorry that we have. It is a question of a person fresh from the study of the schools; it is a question of a person with sufficient maturity to know her own mind and to be willing to devote herself seriously to a serious vocation.

We know that it is extremely difficult to put graduate nurses and pupil-nurses together in the same institution; but we have had to do it and we are going to keep on doing it until we can get our school built up to the point at which the pupils of that school can fitly take care of the university hospitals.

I cannot for one moment share any sympathy with the principle that the system of training nurses should, under any circumstances whatsoever, be exploited for the benefit of the hospital or the hospital service. As a matter of fact, there is no inadequacy of supply of private nurses of any kind in most of our communities.

# ARTERIOVENOUS ANEURYSM OF THE SUPERFICIAL FEMORAL VESSELS *

A. B. EISENBREY, M.D.
Resident Pathologist, St. Luke's Hospital
NEW YORK

The specimen pictured herewith is of interest because of the extensive nature of the alterations in both artery and vein up to the bifurcation of the aorta and vena cava, and because of the probable bearing of these lesions on the cardiac condition, on account of which the patient entered the hospital. It is of interest also to note that, in spite of the marked nature of the lesions in the femoral and iliac vessels, no history of symptoms directly referable to them was obtained.

*History.*—The patient, a physician, aged 63, was admitted to St. Luke's Hospital, Dec. 22, 1912, on the service of Dr. Austin W. Hollis, through whose courtesy I am able to report the clinical history of the case. He complained of shortness of breath and presented symptoms of cardiac insufficiency. There was a history of some dyspnea on exertion, extending over a period of two years, while for the previous two months he had been incapacitated by marked shortness of breath even while lying down and had had some edema of the abdomen, legs and feet. He gave no history of symptoms referable to the genito-urinary, respiratory or gastro-intestinal tracts. His family history was negative. During childhood, the patient had had scarlet fever, and later in life malaria. Luetic infection was denied.

*Examination.*—This showed a cardiac dulness extending 15 cm. to the left of the sternum, murmurs referable to a mitral insufficiency and an irregular, arrhythmic pulse, averaging 90 to 100 per minute. There was moderate edema of the lower extremities and trunk. The urine was negative, except for a faint trace of albumin in one of several specimens examined. There were numerous moist râles in the lungs and signs of fluid at the right base. Relating to the condition in the left thigh, it was noted that in the left groin was a pulsating, expansile tumor, the size of a hen's egg, situated over the profunda femoral artery. Over this tumor was heard a continuous murmur which possessed a systolic accentuation. The information was obtained that about eighteen years before the patient had been shot through the thigh by a small caliber (probably 0.22) rifle bullet. The amount of disability at the time of injury was not stated, but it was known that since that time the patient had lived in and had traveled extensively through South America and had spent much time on horseback.

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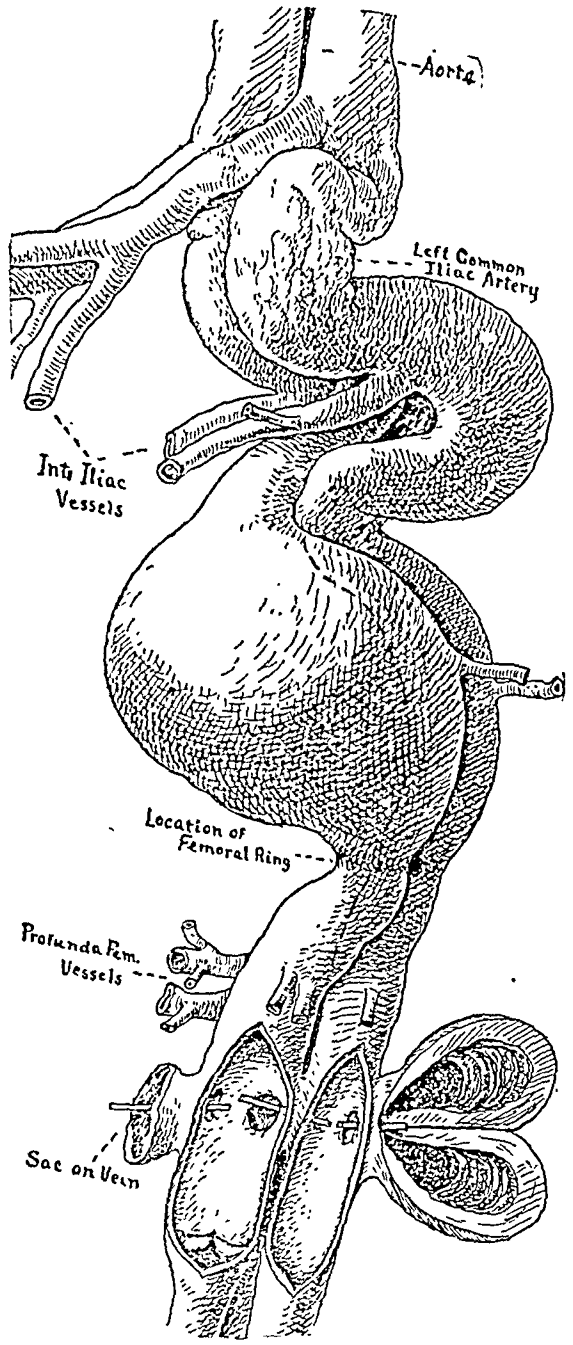
* From the Pathological Department of St. Luke's Hospital, Dr. F. C. Wood, Director.



Arteriovenous aneurysm of the superficial femoral vessels.

The meagerness of the details concerning the subsequent course of this lesion makes difficult an explanation of the extensive changes in the *external and common* iliac artery on that side. The changes in the corresponding veins, however, are explainable on purely mechanical grounds. Obviously, from the rather strenuous nature of the patient's subsequent career, he could not have been greatly incapacitated.

The patient's illness terminated fatally one week after admission.

*Necropsy.*—A general congestion of all the organs was found. The heart was dilated and hypertrophied. The right ventricular wall measured 0.6 cm. and the left wall 2.2 cm. in thickness. The muscle was pale and flabby. The right auricle was thickened and greatly dilated. The tricuspid orifice was markedly dilated, admitting five fingers readily. The mitral orifice admitted three fingers. The valves in both cases were slightly thickened, but not distorted, and showed no vegetations. The pulmonary valve was normal. The aortic orifice was dilated, the leaflets were considerably sclerosed and atheromatous change at their points of attachment was marked. No vegetations, ulcerations or distortions were present. The arch of the aorta was uniformly dilated and showed areas of rather advanced atheromatous change without ulceration, but around the orifices of the coronary arteries calcareous plaques were found. The coronary arteries were thickened and a moderate degree of atheroma was present. The aorta, from arch to bifurcation, showed irregular areas of early atheromatous change. The right common iliac presented a relatively normal appearance, while on the left side the artery had undergone most pronounced changes.

When the pelvic region was examined, the bladder, sigmoid and upper portion of the rectum were found lifted well out of the pelvis and toward the right side. This was due principally to the immense dilatation of the left external iliac vein and to the dilatation and tortuosity of the corresponding artery. Since the lesion was evidently due in large measure to a retrograde process, it is convenient to begin the description of the specimen at the site of the original injury.

The bullet had perforated the superficial femoral artery and vein where they lie in contact about 6.5 cm. distal to the point at which the profunda femoral vessels are given off. It had gone completely through each vessel, and the points of entrance and exit were situated diametrically opposite each other. The adjoining orifices in artery and vein had become closely and densely adherent to each other, and a smooth-surfaced opening of irregularly rounded outline about 0.7 cm. in diameter persisted. The perforation in the left wall of the artery presented a similar appearance and communicated with an egg-shaped, thick-walled, saccular aneurysm about 4.5 by 4 cm. in its diameters. The sac wall was firmly adherent to the surrounding muscle and fascia. Near the orifice the sac was thin and calcareous, and the cavity contained a recent clot, while the other two-thirds was filled by a dense organized clot.

In removing the specimen, owing to the collapsed condition of the vein, a portion was inadvertently left behind, for leading off from the margin of the perforation of the internal side of the vein and continuous with the wall of the vein was a margin of what was evidently the wall of a sac of a diameter considerably larger than that of the vein. Whether this was a saccular aneurysm of the vein corresponding to the one in the artery can only be conjectured. The opening was 0.6 cm. in diameter, irregular in outline and covered by intima. The inner surface of the margin of the sac wall was likewise smooth. For a distance of 1.5 cm. distal to the point of communication, the artery was dilated and the wall markedly sclerosed and atheromatous; below this point it appeared normal. The vein wall was thickened and dilated for a distance of 3 cm. below the communication, where a pair of well-developed valves was found. Below these valves the vein appeared normal. Above the communication both artery and vein were dilated to about 2.5 cm. in diameter. The arterial wall was sclerosed and atheromatous and contained calcareous plaques. The vein wall was considerably thickened. Both artery and vein diminished in size where the vessels passed beneath Poupart's ligament, assuming an oval outline with diameters of about 2 by 1.5 cm. They both immediately dilated again to their former size and the external and common iliac divisions of the artery maintained a diameter of about 2.5 to 2.8 cm. for the remainder of its course, which was in the form of a double ox-bow and increased the actual length of the vessel to 38 cm., while 15 cm. are given as the average normal length. The wall of the artery showed marked thickening, atheroma and calcification. Except for general sclerosis and marked atheromatous change about its mouth the internal iliac artery appeared normal. About 1 cm. above the femoral opening the vein dilated suddenly to form a fusiform, rather thin-walled sac, 6.5 cm. in diameter by about 7 cm. in length. In a modified degree the vein followed the tortuosity of the artery and the dilatation and thickening of the wall extended into the inferior vena cava, while the right common iliac vein appeared normal.

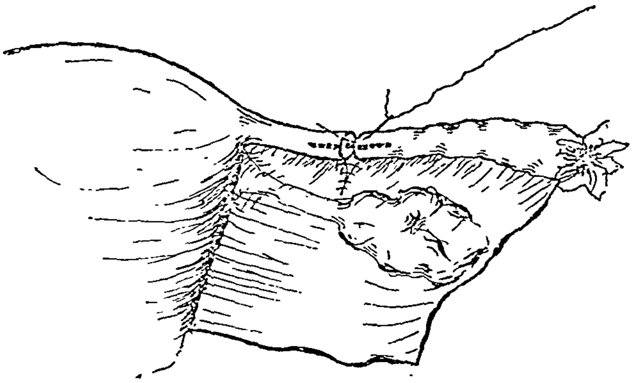
From the condition of the vena cava, its dilatation and thickening, it is reasonable to suppose that the pressure within it had been increased over a long period of time and the findings in the heart, especially on the right side, may well have been due to the distal arteriovenous communication. With a pelvis so crowded by the enormously dilated vessels it is indeed surprising that the patient gave no history of disturbances of urination or defecation. That the pressure had exerted some effect was evidenced by the fact that both ureters were dilated to about twice their normal size, and that the renal pelves were moderately dilated. Some interference with the lymphatic drainage of the left leg had occurred, for the thigh was edematous and the lymphatics and lymph-nodes in the left groin were considerably enlarged.

St. Luke's Hospital.

# A NEW METHOD OF ANASTOMOSING THE OVARIAN TUBE OR VAS DEFERENS

S. L. CHRISTIAN, M.D. and E. L. SANDERSON, M.D.
Visiting Surgeons to Charity Hospital and Schumpert Memorial Sanitarium
SHREVEPORT, LA.

Attempts at repair of the ovarian tube and vas deferens have always been fraught with uncertainty as to whether the lumen of the tube, after simple suturing, would remain patulous or would become obliterated at the site of the suture line. So far as we are able to find out, obliteration of the lumen at the line of sutures is the usual result.



New method of anastomosis as applied to ovarian tube.

It has seemed desirable that some simple method of repairing these structures that would give reasonably certain results be devised. The following plan we have used successfully in three cases, one of which will be cited as an example.

When the ovarian tube or vas deferens has been divided from any cause, the cut ends are picked up, a piece of No. 0 twenty-day catgut is inserted ⅜ inch into each end of the tube and the ends are brought together with two apposing catgut sutures, as shown in the illustration. The lumen cannot become obliterated at the time of healing of the divided ends because the gut is in the canal and will remain there until after repair is complete and Nature has ceased to throw out reparative tissue. The gut, being of absorbable material, is soon completely removed. Gentleness should be exercised in the introduction of the catgut so as not to traumatize the epithelial lining.

## CASE REPORT

Mrs. C. R., aged 29; married nine years, had never been pregnant. She was operated on two years previously, at which time the left tube and ovary were removed. She was operated on by us in February, 1913. At this time a small hemorrhagic cyst was removed from the right ovary with about ½ inch of the middle third of the corresponding tube, which was constricted from previous inflammation and proved, after removal, to have an obliterated lumen. The remainder of the tube was patulous. We then anastomosed the tube according to the technic described. This patient is now pregnant.

The operation will find a field of usefulness in the male and female in cases in which the lumen of these tubes has been destroyed.

# A CASE OF HODGKIN'S DISEASE TREATED WITH BENZENE

G. B. Lawson, M.D., Roanoke, Va., and E. A. Thomas, M.D.,
Wytheville, Va.

*History.*—The patient, G. P. K., white, a farmer aged 59, was admitted to the Jefferson Hospital, Roanoke, Va., in January, 1912. His past history was practically negative except for slight attacks of acute inflammatory rheumatism at the age of 36, again at 41 and again at 44. In March, 1911, he had an attack of fever, with headache and general aching pains. This was diagnosed as the grip. Three days after the onset the lymph-nodes on both sides of the neck began to swell, increasing rapidly for a few days, and shortly after this he noticed markedly enlarged epitrochlears. The swelling of the lymph-nodes increased gradually until the patient was admitted to the hospital.

*Examination.*—On admittance there was marked enlargement of the cervical lymph-nodes on both sides; the swelling on the two sides almost met in front, forming a collar. The individual lymph-nodes tended to be separate and freely movable. The epitrochlear lymph-nodes were about the size of a robin's egg. The lymph-nodes in the groin were only fairly enlarged. There was practically no enlargement of the lymph-nodes in the axilla. The blood showed 5,000,000 reds with hemoglobin of 90 per cent. The leukocytes numbered 7,000, with practically a normal differential count. The physical examination was otherwise practically negative.

*Treatment and Result.*—The patient was treated with the Roentgen ray for four weeks. Under this treatment the lymph-nodes with the exception of the epitrochlears gradually became smaller. A month after the Roentgen treatment was stopped the lymph-nodes were larger than before treatment. In the summer of 1912 the patient was again given Roentgen treatment, and the lymph-nodes again became smaller; but shortly after the treatment was stopped they enlarged again.

Examination in March, 1913, showed swollen lymph-nodes almost encircling the neck in front and extending out beyond the lower jaw at the sides. The epitrochlears were the size of a walnut; the lymph-nodes in the groin were somewhat enlarged, with some enlargement of the axillary lymph-nodes. There were a number of enlargements behind the shoulders and in the lumbar region. These appeared to be subcutaneous lymph-nodes. There was marked cough due to pressure on the bronchi by lymph-nodes. Shortly after this the patient was put on benzene (benzol) by Dr. Thomas. The dose was 5 minims three times a day at first, increased to 10 minims. This dose was continued for six weeks. Two weeks after the benzene was begun, the lymph-nodes everywhere began to diminish in size, and they continued to get smaller even after the benzene was stopped.

Examination in August, 1913, showed barely palpable lymph-nodes in the neck. The epitrochlears were smaller than a butter-bean. There was no enlargement in groin or axilla. The subcutaneous lymph-nodes on the back had entirely disappeared. The patient has worked hard as a farmer for the last few months.

# *New and Nonofficial Remedies*

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on *investigation made by or* under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

**BACILLUS OF BORDET-GENGOU VACCINE.**—This vaccine is believed to be of service in the prevention and also in the treatment of whooping-cough.

Greeley Laboratories, Inc., New York City.

*Bordet-Gengou Bacillus Vaccine for Whooping-Cough Prophylaxis.*—This vaccine is marketed in three doses, containing respectively 200, 400 and 800 million killed Bordet-Gengou bacilli; put up in a special hypodermic unit container.

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The br [illegible] by inoculation and incubation upon Cohendy [illegible] medium.

# *Therapeutics*

## INCONTINENCE OF URINE IN CHILDREN

This troublesome neurosis or nervous reflex of the bladder occurs mostly at night, and occurs in both boys and girls. More or less involuntary evacuation of the bladder at night is not considered abnormal in a babe or a young child, but when a child is over 4 years of age, at least, it must be considered more or less pathologic.

The most frequent tangible causes of this disturbance are worms, and especially pin-worms, elongated or adherent prepuce or adherent clitoris, and the general restlessness and poor sleep caused by adenoid tissue in the pharnyx interfering with breathing; less frequent causes are bladder irritation caused by an actual inflammation in the bladder, or by calculi. Of course simple or specific urethritis, vaginitis or any foreign matter in the vagina may be causes; so may diabetes mellitus, and diabetes insipidus, the peculiar nervous condition evidenced by polyuria.

If no one of the before-mentioned etiologic factors is present, one must assume that there is a congenital weakness of the sphincter muscle of the bladder, or that the urine is irritable and that there is a congenital hypersensitiveness of the bladder, so that the least distention causes its contraction. The normal desire to urinate *probably* comes as a rule from the posterior portion of the urethra slightly dilating and allowing urine to trickle into it. If this relaxation of the sphincter occurs abnormally, of course the reflex desire to urinate is abnormally frequent.

If any of the foregoing reflex causes of nocturnal enuresis are present, proper treatment will stop the wetting of the bed. If none of these tangible causes are present, then one must have recourse to various more or less successful treatments; and perhaps more valuable than medicinal treatment is a rearrangement of the general management of the child. It should be urged that the loosening of an adherent prepuce or an adherent clitoris may alone immediately cure the patient of wetting the bed.

The diet is important in the general management of such a child, and as soon as the child is of such an age that milk is not necessary for its food it is better to restrict the amount of milk, as nearly two-thirds of milk must be passed out by the urine. Of course coffee and tea should be eliminated from the diet of all children, especially of children suffering from this condition. The nearer the diet is vegetarian and cereal, the better for the patient, as vegetables keep more water in the intestines and pass more water out by the bowels and less by the urine than does a diet of more or less meat. All fluids should be restricted after 3 or 4 p. m. and the child should be awakened to urinate when the parents go to bed. Preventing the child from lying on its back and raising the foot of the bed are old methods which are pretty generally known. The object is to prevent, if possible, the urine trickling into the back part of the urethra and starting the vesical spasm.

While the child may be treated psychically, or mentally impressed with different physical treatments, and perhaps in some way frightened into keeping up a nocturnal memory picture of the necessity of waking when the desire to urinate occurs, still, the patient should never be punished, as this is rarely of any value.

Various electrical treatments have been tried, and *probably none* any more successfully than the faradic with an indifferent electrode over the spine and an active small electrode applied over the bladder, over the pubis and over the perineum, and the current made sufficiently strong to cause more or less contraction of the tissues. Theoretically this application of electricity may cause contraction and stimulation of the sphincter of the bladder, but most likely the greatest amount of good is done by the psychic effect on the child. Sometimes the galvanic or constant current, with the large electrode on the spine being the anode and the more active smaller electrode being the cathode and the current allowed to make and break, is successful.

Often the passing of sounds has seemed to be the cause of improvement. In other cases a cold perineal douche, or cold-water spongings applied to the perineum apparently cures the condition.

Medication has not been very *satisfactory, except* that when there is anemia, of course iron is indicated. Probably the most successful drug is atropin, either in the form of belladonna or atropin sulphate, and the amount given should be sufficient *to cause some physiologic* action. The dose to begin with would be 1/500 grain of atropin sulphate to a child 5 years old, administered at bedtime. This dose should be increased until some physiologic activity is evident. Strychnin in the form of the sulphate, or as nux vomica has been recommended, but it is theoretically contra-indicated as exciting the nervous activity of the spinal cord. Bromids to depress the irritability of the spinal cord may apparently be more indicated, but such administration of bromid for more than a few days is bad treatment for any child, as it interferes with the whole nutrition. Frequently ergot is a successful medication, especially when there is a tendency to polyuria or diabetes insipidus. The ability of ergot to stimulate smooth muscle fiber is well understood, and that it is more or less of a sedative to the central nervous system is believed by many clinicians. The ergot is best administered as a thoroughly active fluidextract in doses of 10, 15, 20 or more drops, depending on the age of the child, and given directly after the evening meal.

Though almost any treatment may at times be rapidly successful, it must not be forgotten that many of these cases of nocturnal enuresis end abruptly without any special treatment, and the most inveterate cases frequently have the trouble cease at puberty, owing probably to a better development of all the muscular tissues of the genito-urinary tract.

## IMPORTED MEDICATION

There has long been a tendency in the United States on the part of writers of scientific articles to quote largely from the work of foreign investigators, giving them due credit, and to forget to quote and give credit for as good or even better work done in this country. Our loyalty to ourselves should counteract this tendency. Many an article, valuable and well written, has a long list of quotations from workers abroad though often a very small list of references to those at home. In fact, it almost seems at times as though the work done by our own men was deliberately overlooked.

Except in case of some specific treatment, or some scientific findings, or some recent pharmacologic investigations, the imported medicinal recommendations, especially the prescriptions given for use in certain diseases or conditions, are generally worthless from the standpoint of scientific medication. Unfortunately, and probably thoughtlessly, many of the best medical journals give weight to these importations of fool prescriptions by quoting them as abstracts or in their therapeutic departments. A number of times we have called attention to this error in judgment, as it appears to us.

A large number of these questionable prescriptions come from France, and often carry with them the weight of the opinion of a noted clinician. But generally the mixtures thus offered are irrational, nauseating, many times footless, and often the principal ingredient in the prescription is a simple and well-known drug.

The two following prescriptions[1] have recently been copied from a Paris publication into one of our best journals:

A FORMULA FOR COMBINED STOMACHIC AND LAXATIVE EFFECTS

"℞

| | | | |
|---|---|---|---|
| Fluidextracti rhamni purshianae, | | ʒ v | (20 grammes) |
| Tincturae nucis vomicae, | | ʒ ss | (2 grammes) |
| Aquae laurocerasi, | | | |
| Syrupi, | āā | ℥ ss | (15 grammes) |
| Aquae destillatae, | | ℥ iii | (100 grammes) |

"M. Sig.: Three or four teaspoonfuls daily."

Cherry laurel water seems to be used in prescriptions in Germany and France much as an invocation to the gods would be—we put this cherry laurel water in, therefore the prescription will do good—much as a dash of iodoform on a fresh wound was some time since used to insure perfect asepsis.

This is the age in which patients do not desire, and often will not take, nauseating preparations. To increase the disagreeableness of the fluidextract of cascara sagrada by adding more bitter, the tincture of nux vomica, and a sickish sweet, the syrup, in a preparation to increase a patient's appetite (namely, a stomachic) is of course absurd.

If such a patient were given one or two drops of the tincture of nux vomica in a wineglass of water three times daily, before or with the meals, the appetizing effect of the bitter would be insured in the pleasantest possible way.

The laxative, cascara sagrada, could be given more pleasantly once, at bedtime or after supper, in a tablet containing an active preparation of this drug; such active tablets can be procured. This is not to discuss or to decry the practice of giving small doses of cascara sagrada two or three times a day as a laxative treatment, if the physician deems it advisable, but if that is the treatment that he desires he certainly should not make the nauseating combination above presented.

The second prescription is for the relief of amenorrhea, "in which rheumatic disturbance of the uterus is believed responsible":

"℞

| | | | |
|---|---|---|---|
| Potassii iodidi, | | ʒ ii | (8 grammes) |
| Vini colchici seminis | | ʒ i | (4 grammes) |
| Syrupi sarsaparillae compositi | | | |
| Aquae destillatae | āā q. s. ad | ℥ iss | (50 grammes) |

"M. Sig.: Three teaspoonfuls a day."

It is so delightfully simple to be able to decide that an amenorrhea is due to a rheumatic disturbance of the uterus, and it would hardly be considered fair to ask the diagnostician if he could prove it.

Certainly, the patient with a rheumatic uterus who is suffering from the pangs (?) of amenorrhea would also suffer from disturbance of the stomach if she took the mixture offered.

Iodin in any form may so stimulate the thyroid gland that it in turn will stimulate the ovaries and uterus to normal activities. But in giving potassium iodid, for instance, it seems hardly necessary to offer this ancient combination which was presented long before anyone now on earth was born (though it is not necessary to determine its exact age), when iodid was administered in the dear old syrup of sarsaparilla comp. with the addition of colchicum in some form when rheumatism or gout was supposed to be present.

It should be remembered that this prescription represents the administration of potassium iodid, wine of colchicum seeds, sarsaparilla, glycyrrhiza, glycerin, ammonia water (fluidextract of glycyrrhiza), fluidextract of senna, sugar, oil of sassafras, oil of anise, and oil of wintergreen. The Pharmacopeia says that the compound syrup of sarsaparilla and the fluidextract of glycyrrhiza may be made with ordinary water, while the prescription very carefully calls for distilled water. This questioning of the character of the water would seem needless if it were not generally absurd. The specification in a prescription of distilled water (which is often not fresh), while the other ingredients of the prescription are made with ordinary water, seems an uncalled-for refinement.

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[1] Copied verbatim from the Paris médical.

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SATURDAY, DECEMBER 13, 1913

## METABOLISM IN CANCER

The study of cancer has been approached from a number of directions, which, for the most part, have been determined by the previous experience of the persons engaged in cancer research. Pathologists have been responsible for the search for infective organisms; biologists have elaborated the investigation of specific types of cell proliferation in connection with neoplasms: physiologic chemists have sought for evidences of fundamental alterations in tissue metabolism. This competition among different lines of scientific endeavor has been wholesome and stimulating to the study of disease, as it has furnished various points of view which would probably never have become recognized had it not been for the highly practical considerations which called forth so much effort on the part of many workers.

Although the investigation of the metabolism of cancer patients has contributed a large and growing literature, in the main it has remained a collection of disconnected facts and observations, some of them interesting in themselves, yet bearing no obvious relation to one another or to any underlying organic disturbance which could not be explained quite apart from the specific disease in question. Thus the protein metabolism is generally found to be exaggerated, and evidences of acidosis and an attendant increased ammonia excretion have frequently been reported. This, however, is little else than the metabolic story of partial inanition which attends the cachectic states that accompany so many chronic diseases. The "demineralization," that is, the gradual undue loss of inorganic elements from the organism, is likewise certainly not to be regarded as characteristic of cancer alone. Considerable has been written from time to time regarding the increased output of products of incomplete metabolism or oxidation in the body. Friedrich Müller and others have long since pointed out that the increased protein decomposition may be so pronounced in cases of advanced carcinoma that it is impossible to maintain the patients in nitrogenous equilibrium despite large food intakes. Some of the European investigators have laid much stress on an apparent increase in the output of so-called "oxyproteic acids" and of unoxidized or "neutral" sulphur compounds in the urine. Here again the fact that the largest figures have been found in carcinoma must be correlated with the consideration that in this disease decreased ingestion of food and intensive disintegration of tissues may go hand in hand. At any rate, without being committed to the view that the findings are pathognomonic of cancer, we may appreciate that an increased urinary elimination of incompletely catabolized protein residues — the *Eiweissschlacken* of the German authors — is present in cancer as it may be in cachexias of other sorts.

Dr. Saxl of the First Medical University Clinic in Vienna has lately attempted to interpret the diverse features of cancer metabolism from some common etiologic point of view.[1] He has called attention to the fact that many of the phenomena of metabolism which we have just reviewed are symptomatic of inadequate tissue oxidation as it is presented in the classic forms of poisoning with cyanid. Can it be that small amounts of cyanid radicals are formed in carcinoma? Hydrocyanic acid is known to arise in the metabolism of plant forms. In the animal organism, in which it is notably poisonous, it is in part detoxicated by becoming transformed into sulphocyanid. Sulphocyanids are not unknown in the secretions and excretions of the human organism.

In attempting to reconcile clinical facts with chemical theory, Saxl has actually observed that the administration of small doses of sulphocyanids leads to unmistakable excretion of the oxyproteic acid residues to which reference has already been made. Here, then, is a parallelism between the protein metabolism of the carcinomatous individual and the metabolic disturbances set up by sulphocyanids. The next step obviously was to search for sulphocyanid in the output of cancer patients. According to Saxl, the content of sulphocyanid in the urine of the latter is undeniably larger than what is found in the kidney output of healthy man or in other types of disease. The increase in sulphocyanid appears to be independent of food intake, anemia or cachexia; and such augmented elimination as may attend some febrile conditions is far smaller than that found in cancer. From these facts he draws the conclusion that there is a disturbance in sulphocyanid metabolism in carcinoma.

We have survived too many hypotheses in regard to this elusive disease to accept every new generalization, however plausible it may appear at first inspection of the evidence; yet we are always glad to recognize every scintilla of new suggestion which may furnish a welcome guide to progress. For the present we must agree with von Fürth that the discovery of a specific urinary test of diagnostic usefulness in carcinoma still remains in the land of blessed hopes.

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[1] Saxl, P.: Ueber die Störungen im Eiweissstoffwechsel bei Krebskranken (Zugleich ein Beitrag zur Kenntnis der Rhodanausscheidung), Biochem. Ztschr., 1913, lv, 224.

## THE LIVER AND KETONURIA

The attempt to find the organs and tissues of the body in which definite physiologic and pathologic processes have their seat is characteristic of the modern study of intermediary metabolism. We are no longer content to ascribe some particular phenomenon to "disturbed nutrition" or "perverted metabolism"; but physiologic science seeks to ascertain and indicate with precision the nature of the upset in question and to find the special part of the organism directly concerned therewith. To some degree this has been successfully accomplished in various instances by the method of exclusion. When, for example, the thyroid or the pancreas is removed from its normal connections with the remainder of the body, the altered functions of the latter betray something of the rôle which each of these organs may be conceived to play in the normal physiologic work of the individual. Again, the method of perfusion of isolated organs has enabled the investigator to compare the intake and output of these individual anatomic parts independently of the simultaneous activity of other organs, and to draw conclusions regarding the degree and sort of participation which they are engaged in under ordinary circumstances. It is, of course, always desirable to control and corroborate the findings of such methods by suitable observations on the intact individual, wherever this is possible.

Largely as a result of perfusion studies it has been taught that the liver is the organ in which the formation of the "acetone bodies"—acetone, diacetic acid, beta-hydroxybutyric acid—goes on. What has hitherto been believed as the outcome of such indirect evidence has now been clinched by more direct experiments. Fischler and Kossow[1] have accomplished the demonstration of the correctness of the current view of excluding the participation of the liver in metabolic activities in large measure by means of the familiar expedient of an Eck fistula whereby the portal blood-supply is diverted directly into the vena cava. Animals thus prepared exhibit far less ketonuria under suitable chemical provocation than do the subjects with normal livers. On the other hand, when by a sort of reversed Eck fistula specially devised by the German investigators in the medical clinic at Heidelberg an exceptionally large blood-supply is furnished to the liver, the output of the characteristic members of the ketone group of compounds is markedly increased. The ketonuria may thereby reach enormous proportions.

Although no one is justified at present in concluding that the liver is the sole organ concerned in the phenomena of ketonuria, the sharp parallelism between the quantities of eliminated ketone derivatives and the varying degree of hepatic participation so far as it can be controlled by altering the richness of the blood-supply to the liver, furnishes the best evidence yet offered.

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[1] Fischler, F., and Kossow, H: Vorläufige Mitteilung über den Ort der Acetonkörperbildung nach Versuchen mit Phlorrhizin und der partiell ausgeschalteten Leber nebst einigen kritischen Bemerkungen zur sog. Fleischintoxikation beim Eck'schen Fistelhunde, Deutsch. Arch. f. klin. Med., 1913, cxi, 479.

## HUMAN PANCREATIC SECRETION

Through the inspiration of Pawlow and very largely under his personal leadership new points of view have progressively developed as to the mode in which the digestive secretions are elaborated. Derived almost entirely from experimentation on animals, the facts have nevertheless received wide application to the conditions that obtain in man. We need only mention the now familiar phenomenon of the psychic secretion of gastric juice, the possibility of stimulating and inhibiting secretion by food factors, and the influence of the latter on the enzyme content of the various alimentary digestive fluids, to indicate some of the novelties which have been introduced into the modern physiology of alimentation.

It requires no extended argument to convince one that such facts and conclusions as are the result of observations on the higher animals deserve to be verified or at least tested in every feasible way on man. Human gastric juice is not unknown in the biochemical laboratory nor has the pancreatic juice of man been an extreme rarity there. Until very recent years, however, these and similar secretions have been studied, when possible, almost solely as specimens in which acidity or alkalinity and various characteristic enzymes were demonstrated. Under the dominance of the newer ideas which involve functional adaptations as well as the mere constituents of composition, revision and renewed investigation have become imperative whenever suitable cases are found and the none too frequent opportunities arise. The pancreatic secretion obtained through a fistula in man carefully examined in the medical clinic of the University of Helsingfors by Holsti[1] has fortified our knowledge as to its function and has served to "check up" the conclusions derived from the facts of animal experimentation. First of all, it has been demonstrated for the first time, we believe, that a so-called psychic secretion of pancreatic juice occurs in man, as has also been verified for the gastric juice,[2] though the psychic factor plays a much less prominent part in the case of the pancreas. The mere sight of food or the act of mastication or swallowing is not sufficient, as it is in the case of the stomach, to induce psychic secretion of pancreatic juice. Inasmuch as the latent period prior to the actual flow of the pancreatic secretion is only one or two minutes, whereas that of the gastric juice is four or five minutes, the pancreatic flow cannot be due to an escape of "psychic" gastric juice into the duodenum, which, it is well known, will provoke a flow of pancreatic secretion. The psychic secretion of the pancreas presumably independent of gastric causes lasts about one-half hour. The continuance or cessation of further secretion depends on the nature of the ingested food. If the discharge from the stomach into the duodenum proceeds, a suitable stimulus for pancreatic flow is thereby furnished. The rate of flow is therefore modified in accord with the influence of different foodstuffs on the secretion into and the rate of discharge from the stomach. With a preponderance of carbohydrates it is prompt and long continued in contrast with the delay and brief effect evoked by pure fats. Thus comparable quantities of widely different foods furnished secretory data of the following order: rice, 51 c.c.; meat, 34 c.c.; oil, 22 c.c. The content of digestive enzymes in the secretion obtained varies widely.

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[1] Holsti, Ö.: Beiträge zur Kenntnis der Pankreassekretion beim Menschen, Deutsch. Arch. f. klin. Med., 1913, cxi, 48.

[2] Hornborg, A. F.: Bidrag till kännedom om magsaftsavsöndringen hos människan, Finska läkaresällskapets handlingar, 1903, xliv, 381. Umber, F.: Die Magensaftsekretion des (gastrostomierten) Menschen bei "Scheinfütterung" und Rektalernährung, Berl. klin. Wchnschr., 1905, p. 56.

The secretagogue effect of hydrochloric acid on the pancreatic function is familiar. Water is not without a distinct though evanescent action. Soda inhibits the secretion, as is the case in animals. These and other facts which need not be recited here indicate clearly that in their general features the phenomena of pancreatic secretion are essentially alike in man and the dog—the animal which has furnished the classic data on the subject.

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### NEW TESTS FOR LIVER FUNCTION

On previous occasions we have pointed out the shortcomings of various so-called tests for functional disorders, in particular as they apply to the liver.[1] The fact that few of them measure up to the strict requirement of the specific application intended for them and that most of the proposed methods—usually in the form of tests for the comparative tolerance of sugars—involve physiologic consequences of still undemonstrated character, has placed a limitation to the wide-spread introduction of these diagnostic aids. When the liver, or any other organ, is charged with the responsibility for a certain physiologic duty, and a corresponding task is set to ascertain whether or not the organism is capable of performing it, we must be convinced, on the one hand, that the organ under examination really is *normally the effective agent* in the transformations involved, and, on the other, that no different tissue can act in a compensatory manner. Only under such carefully controlled circumstances will the failure to accomplish the task be convincing evidence of the temporary functional inefficiency of the organ involved and furnish a dependable diagnostic test.

The very fact that so few of the proposed tests for hepatic function have been able to withstand the criticisms aimed at them, and thus to become a part of diagnostic routine, makes it the more urgent to devise new ones based on carefully investigated premises. Because they appear to be supported alike by sound physiologic considerations, verified by clinical evidence, exploration and necropsy findings we refer to three new tests proposed by Whipple[2] and his collaborators at the Johns Hopkins Hospital. The first of these is the lipase test. This enzyme is present in the blood-plasma or serum of normal individuals in quite constant amount. Experimental injury of the liver, by chloroform, phosphorus or hydrazin poisoning, for instance, will always cause a rise in plasma lipase. The test appears to be of value in certain groups of human cases. In eclampsia, for example, in which liver injury is postulated by many and hemorrhagic portal liver necroses are commonly observed at necropsy, the lipase figures are high; in pernicious vomiting of pregnancy and uremia with convulsions the lipase data are normal, by way of contrast. The Baltimore investigators note that pneumonia, peritonitis, leukemias and various infections may show a rise in lipase to double the normal or even more. This need not confuse one, however, for they remark that probably in such conditions the excess of lipase is referable to liver changes, either liver injury or liver stimulation due to cell-cleavage products circulating in the blood. The lipase test can be carried out with uncomplicated apparatus and by a relatively simple technic.

A second possibility which may develop into a test for hepatic function concerns the fibrinogen normally present in blood-plasma. It has been shown that this blood protein may fluctuate with liver injury, falling to a low content at the time of the hepatic damage and returning above normal during the repair which rapidly follows.[3] From data already available it appears that when the fibrinogen is pronouncedly decreased it indicates a grave condition and may mean advanced liver injury, acute or chronic. The fibrinogen index is sometimes very low in certain cases of hepatic cirrhosis, and thus assumes the gravest prognostic import. In human cases of fatal late chloroform poisoning the fibrinogen content may likewise drop. On the assumption here involved that the liver is intimately concerned with the production of the fibrinogen, which is in turn responsible for the clotting of the blood, it is interesting to note that when the liver is exposed to minor injuries it may respond with an overproduction of fibrinogen. The small damage may be looked on, we are reminded, as a stimulus; and the high fibrinogen content found in pneumonia, septicemia, peritonitis, etc., can be explained by the action of certain substances on the liver epithelium. They may be derived from the disintegration of body-cells or foreign cells, and when very abundant may be able to cause degeneration and even liver-cell necrosis; in lesser amounts they may be imagined to have a stimulating action on the liver.

A third proposed hepatic test makes use of the drug phenoltetrachlorphthalein which has been demonstrated to be excreted by the liver into the bile.[4] This substance, which gives brilliant color responses like the other phthaleins in familiar use, must be introduced in a nonoral manner so that a determination of its appearance in the feces will serve as an index of the extent to which it is poured into the duodenum in the bile. Purgation is employed to furnish the intestinal contents promptly when desired. Studies on animals have indicated a remarkable degree of secretory activity and specificity of the liver epithelium. When liver injury is produced by chloroform, phosphorus or similar hepatic poisons the output in the feces may drop to mere traces, depending on the extent of the hepatic damage. The phthalein then comes out in the urine. The drug is not secreted by the intestinal mucosa and in complete obstructive jaundice there is never a trace of phthalein in the feces. Whipple accordingly believes that this new drug gives promise as a functional liver test. It is excreted in the bile through activity of the hepatic epithelium, not that of the bile-duct. Any agent which injures the liver parenchyma or interferes with its functional activity will cause a drop in the phthalein output in the feces.

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[1] Functional Diagnosis—the Liver, editorial, The Journal A. M. A., Jan. 25, 1913, p. 287.

[2] Whipple, G. H.; Mason, V. R., and Peightall, T. C.: Tests for Hepatic Function and Disease under Experimental Conditions, Bull. Johns Hopkins Hosp., 1913, xxiv, 207.

[3] Whipple, G. H., and Hurwitz: Jour. Exper. Med., 1911, xiii, 136.

[4] Abel, J. J., and Rountree, L.: Jour. Pharmacol. and Exper. Therap., 1909, i, 231.

Only a wide application and unbiased tests in varied conditions of disease will finally determine the clinical value of the interesting reactions here reviewed. To say the least, they promise to furnish experience which will lead to a more accurate definition and discrimination of the anatomic and functional abnormalities of the liver; for they are based on investigated physiologic considerations.

## *Current Comment*

### OZONE TO HIDE ODORS

"We have long been of the opinion," says the San Francisco *Argonaut*, "that whatever is unpleasant is bad for us, and we have endeavored in our humble and unscientific way to rule our lives accordingly. That is why we object to cold mutton and to being contradicted. They are bad for us — we felt it was so without knowing the reason." This was apropos of the contention of Dr. Hill of London that ozone is of value, not because it kills germs, but because it removes odors and the like that are injurious because they are unpleasant. Here we have an apparent conflict between esthetics and health. The instinctive shrinking from bad odors is almost a natural protective mechanism. At first thought there comes to mind only one really edible substance possessed of a bad odor, and it has fallen into some disrepute. The man who first remarked, "I smell a rat," voiced a grave suspicion. We have always been suspicious of that which was openly unpleasant, but remembering the man who "had an ax to grind," we have been more suspicious of that sweetness which masks a hidden unpleasantness. When we see a costly, intricate, whirring apparatus and perceive a new peculiar odor, our olfactory organs stimulate our association tracts, and behold, we too, begin to smell a rat!

### TRUE RECREATION

We hear much of the need of relaxation for the "tired business man" and the "jaded society woman." Their needs are supposed to be met, in the first place, by amusements devised for inert and vacant minds, and, in the last resort, by the "rest-cure." Meanwhile, as a recent writer[1] observes, our octogenarian colleague whose name is so frequently associated with this therapeutic measure is demonstrating in his own person the fact that one may fill well-ordered days with steady accomplishment and find recreation, not in passivity, but in a complete change of mental occupation. Thirty years ago Dr. S. Weir Mitchell undertook to write a novel as a vacation pastime after his winter practice. The result was "In War Time," which had a large and immediate success. The effect on Dr. Mitchell himself, even before the success of his novel came to corroborate it, was a thorough recreation, a veritable refreshment of faculties that sent him back to his work reinvigorated and satisfied. He has continued since to take up some serious literary labor every summer. His vigor of mind and body now, when well past four score years of age, attest the healthfulness of this practice begun in middle life. It is possible, indeed, that rather too exclusive stress is laid on it in the article mentioned. Doubtless Dr. Mitchell's health and long life are due in large measure to his habit of changing his environment as well as his occupation every summer. At all events, his example is instructive. *It is well to remember that many patients whose nervous condition is on the down grade toward nervous exhaustion need, not rest or frivolous amusement, but a new and absorbing mental occupation that will take their minds entirely out of the beaten tracks of their previous interests.*

### THE CRISIS IN GERMANY

According to our German exchanges, a struggle between the medical profession and the sickness-insurance societies — *Krankenkassen* — is impending, which, in the view of the medical authorities, is a life-and-death contest involving the independence of the medical profession. With remarkable unanimity, the delegates to a special meeting of the Aerztetag, the organization which deals with the economic interests of the profession, representing 23,000 physicians, decided to break off all negotiations with the insurance societies and deal hereafter only with the sick policy-holders individually. Jan. 1, 1914, there go into effect the new provisions of the insurance law extending its benefits to the great bulk of the population. The insurance societies are making strenuous efforts to secure physicians who will devote their whole time to the care of the insured and act as "strike-breakers." It is said that salaries as high as $3,750 (15,000 marks) per annum have been offered for this service. On the other hand, the organized medical men hope to hold their ranks unbroken so as to cripple the insurance societies and prevent their carrying out their contracts. There are mutual charges and recriminations. The medical men claim to have documentary evidence that the representatives of the insurance societies were only pretending to seek a basis of agreement in their negotiations, while they were really bent on defeating the demands of the physicians for the right of the insured to a free choice of their medical attendant. Medical men look on the move as an attempt to reduce them to the rank of paid employees on a starvation wage, thus taking away the freedom and dignity of the profession. The low fees may be appreciated by reading the proposed articles of agreement with the

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[1] Versatility and Dr. S. Weir Mitchell, Century Magazine, December, 1913.

Berlin Krankenkassen as given in our Berlin letter of Oct. 25, 1913, p. 1550, where we learn that the society proposes to pay an annual sum of $1.25 per capita, while the physicians want at least $1.37.

### "MAKING FACES" AS AN AID TO HEALTH

Massage and exercise, at various times, have been advocated as a panacea for many and divers ills. Fernet[1] now proposes the idea that by exercise we may be able to influence favorably the encroaching deafness of the elderly, or that following otitis media. He remarks that children can often move the ears and part of the scalp voluntarily, and some may become quite exceptional in this faculty. Fernet believes that, through exercise, adults will be able to produce such movements. He has devised three series of exercises, as follows: The first consists of grimaces of the face, contracting in turn the muscles of the lips, nostrils and eyelids, aiming ultimately to reach the ear; next the frontal and occipital muscles are contracted alternately and then the muscles above and behind and in front of the ear. The muscles of the eustachian tube are then exercised by directions which he gives fully. He says, "Medical men, knowing the anatomy of the parts, can train their muscles very effectually in this way; others need an instructor to show them." Just what the ultimate outcome of this proposal will be is questionable. We may picture to ourselves tentatively a future period when all around us will be visible a series of grimacing, ear-wiggling elderly men and women in the act of improving their ears and warding off the encroaching deafness of old age. "Physicians, particularly," says Fernet, "need good hearing, and rather than accepting deafness with the fatalism of the Oriental, they should rise up and fight it." If it is to be combated by this method, the word "fight" is a very appropriate one.

## Medical News

### ARKANSAS

**Hospital News.**—The cornerstone of the Leon N. Levy Memorial Hospital, Hot Springs, was laid with formal ceremonies by the Little Rock Lodge B' Nai B Rith. The building is to cost when completed $100,000, and will be ready for the dedicatory ceremonies early in March.

**Personal.**—Dr. John B. Dooley has taken charge of the Little Rock City Hospital.——A formal dinner in honor of Drs. Verne R. Stover and Cory Wassell was given by the local chapter of the Chi Zeta Chi Medical Fraternity, Little Rock, recently. Dr. Stover sails in a few days for China as a medical missionary.——Dr. Ida Joe Brooks, Little Rock, has been appointed a member of the city Homeopathic Medical Board, vice Dr. William E. Green, deceased.

**New Officers.**—Pulaski County Medical Society at Little Rock, December 1: president, Dr. Alexander E. Harris; secretary, Dr. William T. McCurry.——Arkansas Society of St. Louis, Iron Mountain and Southern Railway Company surgeons at Little Rock: president, Dr. Charles S. Holt, Fort Smith; secretary-treasurer, W. F. Smith, Little Rock.——Third District Medical Society at Cotton Plant: president, Dr. Roscoe T. Gephart, Cotton Plant; secretary, Dr. Edward De W. McKnight, Brinkley.

**Railway Surgeons Elect.**—The Society of the Missouri and North Arkansas Railway Surgeons met at Heber Springs for organization, November 24, Dr. T. B. Bradford, Cotton Plant, acting as temporary chairman. Heber Springs was decided on as the place for the annual meeting to be held December 22, and the following officers were elected: president, Dr. W B. Snipes, Aubrey; vice-presidents, Drs. B. Cooper, Everton, and J. A. Henley, St. Joe; secretary, Dr. Cyrus F. Crosby, Heber Springs.

### DISTRICT OF COLUMBIA

**New Officers.**—Washington Obstetrical and Gynecological Society: president, Dr. John F. Moran; secretary, Dr. Truman Abbe.

**Schmidt on Dyspepsia.**—Prof. Adolph Schmidt was the guest of honor of the District of Columbia Medical Society, November 12, and delivered an address before the society on "Acid Dyspepsia." Prior to the meeting Dr. Schmidt was given a dinner by Dr. William Gerry Morgan.

**Women's Clinic Instituted.**—An outpatient maternity service has been inaugurated in connection with the Women's Clinic Auxiliary. This service is for the benefit of that class of society which does not wish to accept charity and yet cannot afford to pay high fees. In charge of the service are Drs. Amelia Frances Foye, Alice W. Downey, Isabel H. Lamb, Cora Smith King, Louise Ross and Lillian R. Lekites; assistant physicians are Drs. Lenora C. Volkman, Evelyn Mitchell, E. Alberta Reed and Sarah M. Siewers.

**Personal.**—The commissioner of pensions has appointed the following three medical boards of pension examiners for the district: first board, Drs. James A. Gannon, John Van Rensselaer, J. Lawn Thompson and Robert M. Ellyson, ad interim; second board, Drs. Joseph R. Biggs, Michael J. Ready, S. Clifford Cox and Lewis A. Walker, ad interim, and third board, Drs. Taylor B. Dixon, Aloysius W. Valentine, Howard Fisher and Charles H. Bowker, ad interim.——Drs. Randolph B. Carmichael and Harry C. Yarrow have been added to the consulting staff of the free night dispensary of Emergency Hospital, Washington.

### FLORIDA

**New Officers.**—Hillsboro County Medical Society at Tampa, December 2: president, Dr. John C. Knight, Plant City; secretary, Dr. Gilbert H. Hodgson, Tampa.——Pinella County Medical Society, organized at St. Petersburg: president, Dr. Lucian B. Dickerson, Clear Water; secretary-treasurer, Dr. William McC. Davis, St. Petersburg.

**Personal.**—The following staff of local physicians has been appointed for the Duval County Hospital, Jacksonville: medical, Dr. Robert H. McGinniss; surgery, Drs. Paul C. Perry and John E. Boyd; gynecology, Dr. Gerry R. Holden; neurology, Dr. James H. Randolph; laryngology, Dr. William S. Manning; andrology, Dr. Thomas C. Thompson; dermatology, Dr. Joseph Lee Kirby-Smith; pathology and bacteriology, Dr. Henry Hanson. Dr. Paul C. Perry has been elected chairman and Dr. James H. Randolph, secretary of the medical board.

### ILLINOIS

**Inebriates Barred from State Hospital.**—The superintendent of the Watertown State Hospital announces that, as the asylum is now crowded with insane patients, inebriates and other patients not insane will not be admitted to the hospital in the future.

**Personal.**—Dr. James H. Lacey, Albion, has moved to Denver, Colo., on account of his health. He has been succeeded at Albion by Dr. Ross L. Moter, formerly of Browns. His practice has been taken by Dr. Parmenter of Bellmont.——Drs. Carl E. Black, Elmer L. Crouch and George H. Stacy have moved their offices to the Ayres Bank Building, Jacksonville.

### Chicago

**Chicago Dispensary Closed.**—The Northwest Side Free Dispensary was closed November 28, and the funds of the organization were turned over to the Federated Orthodox Jewish Charities of Chicago.

**Personal.**—Dr. Charles F. Sanborn, assistant superintendent of Cook County Hospital, has been appointed superintendent of the new Cincinnati General Hospital.——Dr. Herman A. Moje was seriously injured in a collision between automobiles, December 6.——Dr. Karl H. von Klein is reported to be critically ill in Cook County Hospital.

**Vision Conservation.**—The Illinois Association for the Conservation of Vision and Prevention of Blindness accepted an invitation extended by the Illuminating Engineering Society to attend a demonstration of "Five Years' Progress in Indirect Illumination," December 10. One department of the work of the association is closely connected with the matters of illumination, eye fatigue, etc.

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[1] Fernet: Bull. de l'Acad. de Méd., 1913, lxxvii, p. 209.

**Civil Service Examination.**—The Cook County civil service committee announces competitive examinations open to citizens of the United States for appointment on the staff of the Cook County Hospital in the following departments:

| Department of: | Date of Examination | Hour |
|---|---|---|
| Nervous and Mental Diseases | December 15 | 7 P. M. |
| Contagious Diseases | December 16 | 7 P. M. |
| Children's Diseases | December 17 | 7 P. M. |
| Tuberculosis | December 18 | 7 P. M. |
| Skin and Venereal | December 19 | 7 P. M. |
| Eye | December 22 | 7 P. M. |
| Pathology | December 23 | 7 P. M. |

Appointments are for a period of six years (no salary) with a continuous service of six hours per week throughout the year. Applications for these examinations will be forwarded on request made to Thomas B. Garland, chief examiner, Cook County Civil Service Commission, Chicago.

## MASSACHUSETTS

**Personal.**—Dr. John Wallace, Roxbury, Boston, has returned from Europe.——Dr. Alexander C. Eastman has been elected president and medical director, Dr. Oscar W. Roberts a vice-president, and Dr. Lawrence D. Chapman, a director of the Springfield Babies' Feeding Association.

**Community Sanitation.**—Eight towns with Wellesley Hills as a center are now guarded from infectious diseases by bacteriologic stations having a main station at Wellesley Hills. The towns are Belmont, Framingham, Wellesley, Needham, Weston, Melrose, Canton and Winchester. This idea of community sanitation was originated by Prof. Earl B. Phelps of the Massachusetts Institute of Technology, sanitary engineer of the Board of Health. Each town contributes from its budget a certain sum toward the maintenance of the cooperative health service and if there is a deficit, it is made up by the institute.

## MINNESOTA

**Fire in Railroad Hospital.**—Fire in the Northern Pacific Hospital, Brainerd, November 26, caused $5,000 damage, and necessitated the removal of patients from the medical ward of the institution. No casualties occurred.

**Tuberculosis Removal Law Enforced.**—The health commissioner of Minneapolis on November 20 made first use of the state law which authorizes health officers to remove tuberculosis patients from private homes to public hospitals in order to prevent the spread of infection.

**Personal.**—Dr. Arthur W. Ide, Brainerd, has been appointed division surgeon for the Northern Pacific Railroad.——Dr. Charles N. Hensel, St. Paul, fractured his right forearm while cranking his automobile, November 24.——Dr. Thomas Lowe, Pipestone, was elected president of the Southwestern Minnesota Medical Society at its annual meeting held in Worthington, November 13.

**Hospital News.**—The formal opening of the West Side General Hospital, St. Paul, took place November 27. The institution is to be operated by the Evangelical Hospital and Deaconess Home Association, which has purchased the old German Hospital and about two acres of land adjoining. About $8,000 has been expended for interior furnishing and decorations and it is planned to raise a fund of $100,000 for maintenance and improvement.

**Southern Minnesota Physicians Hold Meeting.**—The Southern Minnesota Medical Association held its annual meeting in Mankato, December 3. Dr. Robert H. Babcock, Chicago, gave an address on "Infections of the Heart," followed by a clinic, and it was voted to hold the midsummer meeting in Winona in August next. The following officers were elected: president, Dr. Hugh F. McGaughey, Winona; vice-presidents, Drs. John H. Adair, Owatonna, and Clifford C. Leck, Austin; secretary, William T. Adams, Elgin (reelected), and treasurer, Dr. George F. Merritt, St. Peter (reelected).

## MONTANA

**Personal.**—Dr. Joseph A. Tremblay, Butte, has been reappointed physician of Silverbow County.——In the case of Dr. C. V. Norcross, Butte, against Peter Scherr, in which suit was brought for $1,302 for professional services, the jury returned a verdict in favor of the plaintiff, November 26.

**Hospital Reopened.**—The Samaritan Hospital, Glendive, which was closed in September last, was reopened November 19, under the auspices of local physicians, and will hereafter be known as the Glendive General Hospital. At a meeting of the physicians interested in the new hospital, November 17, the following officers were elected: president, Dr. R. H. Beech; vice-president, Dr. Baldwin F. Consler, and secretary-treasurer, Dr. M. G. Danskin.

**Warning.**—Dr. Gaylord Warstell, Big Sandy, warns against a Mr. E. S. Armstrong, a well-fed, well-groomed, round-eyed man, about 5 feet 7 inches in height, weighing 180 pounds and apparently about 35 years of age, with quilted cloth hat and gray suit. He claims to be a representative of a Minneapolis tailoring house and makes an offer of a reduction for cash for clothing, taking the physician's check in payment. Dr. Warstell asks that anyone knowing Armstrong's home address or present whereabouts will send this, with such other information as he may possess, to him.

## NEW JERSEY

**Sterilization Law Void.**—The supreme court, at Trenton, November 18, set aside as unconstitutional the act of 1911, providing for the sterilization of epileptics, feeble-minded, criminals and other defectives.

**Personal.**—Dr. Mortimer J. Lampson, superintendent of the Jersey City Hospital, has resigned.——Dr. William D. Mingham, Newark, has been appointed a member of the consulting staff of the Essex County Hospital, Overbrook.

**Children's Colony to Be Established at Burlington.**—The proposal to establish a Burlington County colony for the care of defective children was assured at a meeting of the colony committee, when financial report showed that more than half of the $8,000 needed for the erection of buildings had been raised by private subscriptions. The work will be under the direction of the state authorities and the faculty of the Vineland School for Feeble-Minded Children have been asked to cooperate in its management.

## NEW MEXICO

**New County Society.**—At the last meeting of the State Medical Association, held in Albuquerque, the McKinley County Medical Society was granted a charter.

**Personal.**—Dr. Leroy S. Peters has purchased a part interest in the Albuquerque Sanatorium and will be associated with Dr. Abraham G. Shortle in the work of that institution.——Dr. and Mrs. Frank E. Condert, Gallup, have moved to Tempe.

**Charges against Physicians Dismissed.**—The indictments against twenty-five physicians of Albuquerque for failing to file death certificates with the county clerk at Bernalillo County were dismissed November 19, on motion of the district attorney.

## NEW YORK

**Personal.**—Dr. M. J. McGrath, Oswego, has been appointed district surgeon for the New York Central System, vice Drs. James E. Mansfield and David D. O'Brien, resigned.——Dr. Leslie M. Wilkens, Lackawanna, was seriously injured in a collision between his motor-car and a street-car in Buffalo, November 27.

**To Study Medical Laws.**—The American Association of Medical Jurisprudence was incorporated on December 5 by the secretary of state. The object of the association is the investigation and advancement of the science of medical jurisprudence. The study will be conducted principally in the State of New York and the United States of America. The directors are Reynold Webb Wilcox, Alfred E. Ommen, Charles P. Barney, John C. West and Oscar W. Ehrhorn.

### New York City

**Godlee Honored.**—Sir Rickman J. Godlee, president of the Royal College of Surgeons, was made an honorary member of the National Institute of Social Sciences, December 3, and presented with a gold medal in recognition of his services to humanity.

**Healthful Year for New York.**—The Bureau of Records announces that the city has had a most healthful year, the death-rate for the first eleven months of the year being 13.77 per 1,000 population, as against 14.08 for the corresponding period of 1912. For the week ended November 29, the death-rate was 12.51 per 1,000 population, as against 12.62 for 1912.

**New York County Medical Society Elects.**—At the one hundred and eighth annual meeting of the Medical Society of the County of New York, the following officers were elected for the following year: president, Dr. T. Passmore Berens; vice-presidents, Dr. Howard Lilienthal and Dr. Frederick E. Sondern; secretary, Dr. John Van Doren Young; assistant secretary, Dr. J. Milton Mabbott, and treasurer, Dr. Charles H. Richardson.

**Another Building for Montefiore Home.**—This institution, which has just moved into its new buildings, which were built at a cost of $2,000,000 and which accommodate 630 patients, is now planning to provide another building for the accommodation of persons able to pay wholly or in part for their treatment, and $200,000 has already been subscribed for this purpose. Until this building is completed all patients are cared for free of charge.

**Site for Mothers' Home.**—Mrs. Rudolph A. Muller has donated two acres of land as a site for the Home for Expectant Mothers, of which Mrs. Robert H. Sayre is president. She will also donate all the milk, fruit and vegetables required for the home from her own estate. The raising of funds for the buildings has already been begun. Each patient will have her own room during her month's stay in the home, and after leaving it will be under the care of the Prenatal Feeding Association, which will establish a chain of restaurants where mothers may get their lunches or will send visiting nurses to the homes to see that the mothers get proper food there.

**Needs of Hospitals.**—In the report of the Hospital Saturday and Sunday Association emphasis is laid on the increasing cost of hospital maintenance and on the decreased receipts from patients. During the past year it cost $4,932,309 to run the forty-seven hospitals of the association, an increase of $382,441 over the previous year. The income of the forty-seven hospitals last year was $18,706 less in payments from patients, $25,657 less from the city, and $21,890 less from endowment. In spite of this decrease the hospitals gave 134,272 days of hospital service, making a total of 2,084,442 days' treatment, of which 1,291,442, or 62 per cent., were entirely free.

**Laryngological Society Celebrates Anniversary.**—On November 25 the New York Laryngological Society, said to be the oldest society in the world devoted exclusively to that specialty, which was merged in 1885 with the Laryngological Section of the New York Academy of Medicine, celebrated its fortieth anniversary. Dr. William W. Carter, chairman of the section, presided. The historical address was delivered by Dr. Clinton Wagner. Dr. D. Bryson Delavan delivered a commemorative address and presented a bronze tablet and several historical memorabilia, and Dr. Carter accepted the tablet on behalf of the society. At the conclusion of the formal exercises, several short addresses were made by various members of the society and guests.

## NORTH CAROLINA

**Sanatorium Opened.**—The Wilmington Red Cross Society has completed a sanatorium about two miles from the city for the treatment of tuberculosis. The institution contains accommodations for twenty patients and provides for colored as well as white patients.

**Hospital News.**—The Good Hope Hospital was opened in Duke recently. Thanksgiving Day was made special donation day for the institution, which received benefactions from more than two hundred citizens of the town and vicinity.——A stock company with a subscribed capital of $30,000 has been organized at Elizabeth City to build a general hospital. Four of the seven directors are physicians of the city.

**Mental Hygiene Conference.**—The State Conference on Mental Hygiene was held at Raleigh, November 28 to December 2, under the direction of Dr. Albert Anderson, superintendent of the State Hospital for the Insane. As a result of this conference the North Carolina Society for Mental Hygiene Study was organized at Raleigh with a provisional executive committee composed of Dr. John McCampbell, superintendent of the Morgantown State Hospital, William W. Faison, superintendent of the Goldsboro, and Dr. Albert Anderson, superintendent of the Raleigh State Hospital. Dr. Anderson is secretary of the committee.

## OHIO

**Society Adopts Memorial Resolution.**—Summit County Medical Society at its meeting, November 4, adopted resolutions of sympathy and regret regarding the death of Dr. Herman Christian Theiss, Akron.

**Hospital News.**—The Barberton Hospital has been purchased by A. A. Besaw from Mr. and Mrs. S. A. Carpenter who had operated the institution since 1910. During the existence of the hospital, 630 patients have been treated with thirty-five deaths.

**Hospital Staff Members Banqueted.**—In celebration of the twenty-seventh anniversary of the connection of Drs. George B. Evans and Charles H. Humphreys with St. Elizabeth's Hospital, Dayton, they were given a complimentary dinner by the sisters and doctors of the staff, November 24. Dr. Henry S. Jewett, president of the staff, officiated as toastmaster.

**Hospital News.**—It is announced that sufficient funds have been collected to warrant the construction of a new Jewish hospital at Cleveland in the spring. It is planned to have an institution of 100 beds, to cost about $100,000.——St. Vincent's Charity Hospital, Cleveland, is having a week's campaign to raise $250,000 for the construction of a new wing for the institution.

**Personal.**—A. J. Ranney, for twelve years superintendent of Lakeside Hospital, Cleveland, has resigned on account of ill-health and has been succeeded by Dr. Andrew R. Warner.——Major Vernon Roberts, National Military Home, Dayton, has been appointed chief surgeon at the Milwaukee Soldiers' Home, vice Dr. Oscar Chrysler, deceased.——Drs. William T. Corlett, Henry J. Gerstenberger, Norman W. Ingalls, David Marine, and Vernon C. Rowland have returned from abroad.

**New Officers.**—Summit County Medical Society at Akron, December 2: president, Dr. David H. Morgan; secretary, Dr. Alexander S. McCormick, both of Akron.——Allen County Medical Society at Lima, November 18: president, Dr. Oliver S. Steiner; secretary, Dr. Paul Steuber, both of Lima.——Ashland County Medical Society, fifty-fourth annual session at Ashland, November 18: president, Dr. Frederick V. Dotterweich; secretary-treasurer, Dr. Cortland B. Meuser, both of Ashland.

**Western Reserve Notes.**—Dr. Oscar T. Schultz, assistant professor of pathology, has been appointed professor of pathology at the University of Nebraska.——Dr. A. A. Johnson, formerly pathologist of the City Hospital, has been appointed instructor of pathology at the University of Nebraska.——The department of pathology has moved its teaching quarters from the medical school to the pathology building of the Lakeside Hospital, that the instruction may be given in closer conjunction with the clinic and autopsy rooms.——Dr. C. M. Winn, formerly resident pathologist at St. Thomas Hospital, Panama, C. Z., has been appointed resident pathologist at Lakeside Hospital.——Drs. Hunter Robb and George N. Stewart are spending their leave of absence in Europe.——Dr. Carl A. Hamann, dean of the school, is seriously ill with streptococcus infection of the arm.

## OKLAHOMA

**Personal.**—Dr. A. S. Riddell, Chickasha, has been appointed deputy internal revenue collector for Oklahoma.——Dr. Curtis R. Day, Oklahoma City, has been elected president, and Dr. R. H. Riley, Oklahoma City, secretary-treasurer of the Oklahoma Association for the Prevention of Tuberculosis.

## PENNSYLVANIA

**Personal.**—Dr. James A. Peeples, Peters Creek, fell in his barnyard, November 29, fracturing his right leg.——Dr. Edward F. Menger, Fort Lauden, has been appointed resident physician of the Carlisle Indian School.——Dr. Edward B. Shellenberger, Warren, has been appointed assistant medical director of the state dispensary by State Commissioner of Health Dr. Samuel G. Dixon.

**Appointments in the Medical Department, University of Pittsburgh.**—The following new appointments to the faculty have been made: Dr. W. E. Gardner, assistant demonstrator in anatomy; Dr. J. W. McMeans, assistant in clinical pathology and demonstrator in pathology; Dr. J. C. Irwin, instructor in obstetrics; Dr. R. J. Cary, demonstrator in medicine; Dr. Arthur Miltenberger and John Howard Seiple, assistant demonstrators in obstetrics, and Mr. Orville J. Walker, assistant in physiology and pharmacology. The following increases in rank have likewise been provided for: Dr. Chris Gardner, from assistant demonstrator to demonstrator in anatomy; Dr. Walter L. Croll, from instructor to assistant professor in obstetrics.

**Public Drinking-Cups Prohibited.**—On December 1 the advisory board of the State Board of Health prohibited the use of the public drinking-cup and the common towel. Barbers are also forbidden to brush the eyebrows of customers with a common brush, and proprietors of public eating-houses and restaurants must thoroughly cleanse all dining-room utensils after each individual use. The school-boards, clerks of council and health officers have received copies of the new regulations. This order has resulted in the disappearance of glasses from all public drinking-fountains at the Capitol, and a combination public drinking-bowl and faucet has been installed for the use of clerks. Paper towels have also been placed in all departments. Episcopal clergymen are interested to know whether the new order will interfere with the common communion cup used in the service, as the common cup is regarded as part of the ritual.

### Philadelphia

**Personals.**—Dr. George W. Outerbridge has been selected to fill the vacancy of the visiting obstetrical staff of the Maternity Hospital of Philadelphia, caused by the resignation of Dr. Levi J. Hammond.

**Gift to the University.**—The descendants of Dr. Priestly, the discoverer of oxygen, have presented the University of Pennsylvania with a chemical balance which was used by Dr. Priestly in his experiments more than 130 years ago.

**Serum for Influenzal Meningitis.**—Physicians of Philadelphia and adjacent territory can now obtain the new serum for treating influenzal meningitis by applying to Dr. Paul A. Lewis, director of the Ayer Clinical Laboratory at the University of Pennsylvania.

**Four Jefferson Professors Honored.**—Three hundred physicians attended the reception given by Daniel Baugh in honor of four professors emeritus of Jefferson Medical College. The guests of honor were Drs. William W. Keen, William Joseph Hearn, James C. Wilson and James W. Holland.

**University Medical Societies Merged.**—The John Morgan Medical Society has been formed at the University of Pennsylvania by the consolidation of the H. C. Wood, Tyson, Ashurst and Penrose societies. The new society takes its name from the founder of the medical school.

**Volunteer Medical Staff.**—A volunteer medical staff has been formed, composed of physicians interested in the work of the West Branch of the Y. M. C. A., whose new $250,000 building at Sansom and Fifty-Second streets was opened December 1. They are Dr. Sidney E. Bateman, Dr. Paul Elmer Reiff, Dr. Gordon Saxon, Dr. Walter J. Snyder, Dr. Samuel McClary, III; Dr. Andrew F. Snively, Dr. Harrington L. Dickinson, Dr. Oscar G. Fegley and Dr. John H. Shaw.

**Little Mothers' Leagues Formed.** — December 2, Little Mothers' Leagues were formed in eleven Philadelphia schools under the auspices of the Child Federation. The establishment of these classes is only a beginning. They are not compulsory, the children being chosen by the teacher of the various schools. The teachers of the various classes are themselves instructed in the day's lesson and merely repeat it to the children. The instruction is given the teachers by Dr. Samuel McClintock Hamill.

**Medicine of Assyria and Babylonia.**—An address will be delivered by Prof. Morris Jastrow of the University of Pennsylvania on "The Medicine of the Babylonians and Assyrians," before the Section on Medical History of the College of Physicians, in Thomson Hall at the college, December 16. This will result from the noted Assyriologist's translation of the ancient tablet lately presented to the college by Drs. S. Weir Mitchell and Richard H. Harte, the Assyrian medical code being for the first time revealed.

**Advancing Joint Lecture Course.**—In order that the Rush Society may be truly representative in its activity, a revision of its constitution and by-laws in two particulars was voted at the special meeting called for that purpose. The name of the society has been lengthened to read "The Rush Society for the Correlation and Support of Medical and Biological Lectures in Philadelphia," and the distinction between active and associate members has been abolished and it is now provided that "any person interested in the objects of the society may become a member on the payment of the annual dues of $2." It is believed that by these changes the effectiveness of the lectures in Philadelphia will be increased, since while each lecture will remain autonomous, the united effort will aid all to obtain an increase in publicity, attendance and financial support.

### SOUTH CAROLINA

**Tuberculosis Clinic Has Permanent Quarters.**—The tuberculosis clinic of the Columbia Associated Charities opened November 26 in its new quarters at 917 Main Street. The clinic is open daily from 12 to 1 o'clock. Two physicians are in attendance.

**Faculty Changes.**—The trustees of the Medical College of the State of South Carolina, Charleston, at their meeting November 25, elected Dr. Charles P. Aimar, Charleston, professor of general surgery, vice Dr. Charles M. Rees, deceased; Dr. Allen J. Jervey, professor of the principles of surgery and surgical pathology, and Dr. Daniel L. McGuire, assistant professor of surgery.

**New Hospital Opened.**—The Camden Hospital was opened in Camden, December 1. The hospital was built by Bernard M. Baruch in commemoration of the beginning of the medical career in that town of his father, Dr. Simon Baruch, New York City. The hospital has an endowment of nearly $100,000, a bequest from John Burdell, and is unique as a rural hospital in that it has a dispensary attached at which incipient cases of tuberculosis may early be detected.

**New Officers.**—Greenville County Medical Society at Greenville, December 1: president, Dr. Charles O. Bates; secretary, Dr. Samuel G. Glover (reelected), both of Greenville.——Charleston County Medical Society at Charleston, November 6: president, Dr. William H. Johnson; secretary, Dr. Michael M. Edwards (reelected), both of Charleston. Arrangements for building an annex to the Hospital and Training School for Nurses were submitted, and a committee was appointed to secure donations for the furnishing of the new rooms.

### WISCONSIN

**New Officers.**—West Wisconsin District Medical Society: tenth annual meeting at Eau Claire, November 25: president, Dr. Eugene E. Tupper; secretary, Dr. Joseph C. Baird, both of Eau Claire.

**Settlement of Minahan Estate.**—In the Probate Court in Fond du Lac, November 25, final settlement was made of the estate of Dr. William E. Minahan, a victim of the *Titanic* disaster. The estate is appraised at more than $83,000.

**Protest by Medical Society.**—The Waukesha City Medical Society has passed resolutions protesting against any action by the city council which will lessen the investment of $15,000 in the hospital building. In the opinion of the society, a hospital with a capacity of less than fifteen or twenty beds cannot be made self-supporting.

**Osteopaths May Not Practice Without License.**—The Wisconsin Superior Court has handed down a decision in the case of W. A. Arnold, sheriff of Milwaukee County, versus Herbert Schmidt, setting forth that osteopaths cannot practice medicine in *Wisconsin without first obtaining a license*. The sheriff was directed to take the defendant into custody.

**Dinner to New Professors.**—The medical faculty of Marquette University, Milwaukee, gave a dinner to the new professors in the medical department at the Hotel Pfister, December 6. Drs. Albert J. Ochsner and Henry B. Favill of Chicago, Professor Bardeen of the University of Wisconsin, and the dean of the medical department of the University of Minnesota were among the speakers.

**Personal.**—Dr. William E. Scollard, Milwaukee, is reported to have been adjudged insane, November 21.——Dr. Lewis A. Kliese, Milwaukee, has been appointed examining physician for Milwaukee County of the insurance department of the state.——Dr. William F. Lorenz of the staff of the Mendota City Hospital, has been detailed by the U. S. Public Health Service to make a special study of pellagra.——Dr. James W. Frew, Milwaukee, has been commissioned Major, M.C., N. G. Wisconsin, and assigned to duty with the First Infantry.——Dr. Charles H. Lemon has been elected president of the Milwaukee branch of the American Electric Railway Association.

**County Sanatorium Notes.**—Dane, Waupaca and Winnebago counties have voted down the proposition to use county tuberculosis sanatoriums.——Lakeside Sanitarium, Oshkosh, was formally opened November 26, and on this occasion there was a joint meeting of the Waukesha City and County Medical Societies.——Sunnyrest Sanatorium, the Racine County Institution for the care and treatment of tuberculosis, was finally turned over to the county board, November 27. The building was constructed and equipped for less than $35,000.——The county board of Marinette County has appropriated $20,000 for a county tuberculosis sanatorium.——Brown County Board of Supervisors has appropriated $25,000 for a tuberculosis sanatorium.

### GENERAL

**Tri-State Physicians Hold Meeting.**—At the thirtieth annual meeting of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee held in Memphis, November 11 to 13, the following officers were elected: president, Dr. John Darrington, Yazoo City, Miss.; vice-presidents, Drs. W. D. McCalip, Yazoo City, Miss.; E. C. McDaniel, Tyronza, Ark., and H. B. Everett, Binghamton, Tenn.; secretary, Dr. J. L. Andrews, Memphis (*reelected*), and treasurer, Dr. J. A. Vaughan, Memphis (reelected).

**Bacteriologists to Meet.**—The annual meeting of the Society of American Bacteriologists will be held in Montreal, Dec. 31, 1913, and Jan. 1 and 2, 1914, under the presidency of

Prof. C. E. A. Winslow. The meeting of January 1 will be held at McDowell College, the other meetings at the medical building of McGill University. The president's address on "Characterization and Classification of Bacteriologic Types" will follow the annual dinner at the University College, January 1. Dr. A. Parker Hitchens, Glen Olden, Pa., is secretary of the society.

**Anti-Alcohol and Narcotic Advocates Meet.**—The forty-third annual meeting of the American Society for the Study of Alcohol and Other Narcotics was held in Philadelphia, December 3 and 4, and the following officers were elected: president, Dr. John J. Kindred, New York City; vice-presidents, Drs. Alfred Gordon, Philadelphia; Daniel H. Kress, Loma Linda, Cal.; Thomas A. MacNicholl, New York City; Tom A. Williams, Washington, D. C., and Col. L. Mervin Maus, M. C., U. S. Army; secretary, Dr. G. A. Benton, Miami, Fla.; assistant secretary, Dr. De Lancey Carter, New York City; corresponding secretary, Dr. Thomas D. Crowthers, Hartford, Conn., and treasurer, Dr. Pitts Edwin Howes, Boston.

**Educational Effect of Medical Inspection in the Schools.**—According to the weekly *Bulletin* of the New York City Board of Health the percentage of children requiring treatment for defects other than those of the teeth has declined from 44.20 in 1909, to 30.1 in 1913. The percentage of those requiring dental treatment declined from 57 in 1909, to 49.4 in 1912; defective vision from 13.4 in 1909, to 7.3 in 1912; defective nasal breathing from 18.7 in 1909, to 7.6 in 1912; enlarged tonsils from 22 in 1909, to 10.4 in 1912; malnutrition from 3.14 in 1909, to 2.8 in 1912. By persistent follow-up work in the homes the percentage of glasses procured has increased from 27 in 1909, to 50.5 in 1912, and of tonsil operations from 22 in 1909, to 29 in 1912.

## FOREIGN

**Penalized for Alleged Violation of Professional Secrecy.**—Our exchanges state that the insurance company refused to pay the accident insurance on a workingman who had been killed in an industrial accident, basing this refusal on the fact that the physician of the hospital where the man had died (Lille, Belgium) had found at necropsy that the victim had leukemia, and had so informed the insurance company doctor when he inquired in regard to the necropsy findings. The widow brought suit against the hospital physician claiming violation of professional secrecy. The local court acquitted him but the recent decision of the court of appeals held him responsible both from the civil and the pecuniary standpoints.

## CANADA

**News Items.**—It is expected that in 1915 courses will commence in the new British Columbia University, of which institution Dr. Frank F. Wesbrook recently accepted the presidency.——Winnipeg had 192 cases of infectious diseases in October with nineteen deaths. Regina, Sask., had sixty-three cases of typhoid fever in October.——Medical inspection of factories to eliminate conditions producing "industrial diseases," will shortly occupy the attention of the Toronto health department.——The Ontario Board of Health has ordered Ottawa to provide a new and safe water-supply.

**Hospital News.**—Mr. John Ross Robertson, Toronto, has donated $10,000 for the purpose of furnishing the new wing of the Hospital for Sick Children. The city of Toronto gave $250,000 for building this new wing.——At Chatham, Ontario, December 1, Dr. John L. Bray, Toronto, registrar of the Ontario Medical Council, opened a new wing to St. Joseph's Hospital.——The Home for Incurable Children, Toronto, cared for thirty-one children during the past hospital year. Two new patients were admitted during the year, three were discharged and one died. The receipts for the year were $15.508.11.

**Personal.**—Dr. L. N. MacKechnie, port officer at Vancouver, B. C., has received instructions from the Director-General of Public Health at Ottawa, Dr. F. Montizambert, to make an inquiry into the prevalence of bubonic plague-infected rats that are now so prevalent at Seattle and Tacoma.——Dr. George A. B. Hall, medical officer of health, of Vancouver, states that city has not been so free in the last five years from infective diseases as at present.——Dr. Neil McNeil, Prince Rupert, B. C., has left for Europe.——Dr. Louis Laberge, medical officer of health of E. Montreal, has resigned after twenty-eight years' service.——Dr. Clarence L. Starr, Toronto, has been appointed chief surgeon at the Hospital for Sick Children.

## LONDON LETTER

*(From Our Regular Correspondent)*

London, Nov. 29, 1913.

### The British Medical Association and the Insurance Act

Dr. Alfred Cox, medical secretary to the British Medical Association, has delivered an address to the Glasgow and West of Scotland branch in which he foreshadowed important changes which were likely to occur in the relations between the profession and the government in the working of the National insurance act. He pointed out that the individual physician was quite able to look after his own interests when dealing with individual patients, but when it came to dealing with organized bodies he must have some association behind him, and there was none even remotely eligible for this purpose except the British Medical Association. In future the profession would have many more dealings with organized bodies than it ever had in the past, and instead of doing anything to split it up into classes and thereby weaken it, every man should do his best to strengthen the one association which could progress to speak in the name of the profession. Some of the physicians who had not gone on the panels (that is, served under the act), were saying that the association had now become a pro-panel body and was of no use to nonpanel physicians. The history of the association showed that there had never been a time when the interest of one section of the profession had not been balanced against the interests of other sections, and on the whole this had been fairly done. Consolidation of the profession was important, for there was nothing to hope for from either political party. The danger in front of the profession was that the prominent politicians in favor of a whole-time service would have their way. At the end of 1915, when the present system of medical benefit had to be reviewed, there would be a bigger fight in front of the profession than it ever had. It would have to repel assertions that the remuneration was excessive for the work done, and attempts would probably be made to reduce the remuneration, or what amounted to the same thing, increase the work. Any successful attempt to reduce the remuneration would have a reflex action on other forms of medical remuneration.

Another question which would come up would be the provision under the act of medical attendance on the dependents of insured persons. If they were included, about three-fourths of the whole population would be swept in. The panel service had the inherent defects of contract practice, but owing to the efforts of the association it included many good points of private practice as compared with the old lodge practice and was infinitely superior. The lodge doctor, if he did not keep on good terms with the small clique which ruled every lodge, was under a considerable risk of losing the whole society. This could not happen in panel practice and the remuneration was much better.

With regard to the proposed increase of the subscription to the association (from $6 to $10 a year), he asked that if it was proposed to begin *de novo* to organize the profession and provide a first-class medical journal, would they commence with a subscription of $6 a year? This subscription had been based on old conditions which had long since passed. The profession was making greater demands on the association every year. It was also proposed to create a special fund which could be used for exigencies which might arise. A great source of weakness in the struggle which had just taken place with the government was that the association had no fund except on paper out of which it could say to a physician who was hesitating whether or not he would follow the lead of the association, "If you will back up the rest of the profession we have money to devote to seeing you through any financial difficulty which may arise."

### Therapeutic Possibilities of Polonium

Sir William Ramsey, the eminent chemist, speaking at a meeting of the British Radium Corporation, which is producing radium from certain ores in Cornwall, held out the prospect that there were other substances in all radium ores which might be used therapeutically. They were polonium, ionium and actinium, which at present were chemical curiosities that had not been extracted in any great quantity, though there was no very great difficulty in extracting them. He was in hopes that polonium, which was perhaps most easily produced, might prove to have therapeutic qualities. Polonium was somewhat analogous to selenium, tellurium and also to bismuth, the therapeutic qualities of which had been tested. These three elements remained in the system for some length of time, and were then excreted, but they had practically no therapeutic qualities. Polonium differed from them entirely in that it gave off alpha-rays just as radium did, and the potency of radium for therapeutic purposes appeared to depend on the alpha-rays. Radium could not be administered as a medicine. It was too expensive and probably too dangerous, as he did not believe it would be easily eliminated from the system; but the three substances he had mentioned were eliminated in about three months, and his impression was that polonium might produce its effect for about that time and then be eliminated. Of ionium and actinium he could say less, but possibly they might replace radium for the uses for which it was at the moment employed.

### The Passing of Malaria

At a meeting of the Royal Colonial Institute, Dr. Malcolm Watson gave an account of his work in the prevention of malaria in the Federated Malay States. He showed that at any rate as regards dry cultivation, pool-breeding mosquitoes could be abolished by open drainage, that stream-breeders could not be so abolished, but required drainage, and that countries with no hill-stream breeders had no hill malaria. He described investigations which he had carried out in other parts of the world where malarious conditions more or less prevailed, in the Duars at the foot of the Himalayas, and in the Jeypore hills in Madras; in Sumatra, Panama, British Guiana and Barbadoes, and declared that the new knowledge had given absolute control over the malaria of low, flat land, and high hopes of control over that in hill-land. There was also every hope of abolishing malaria from rice-fields. He believed that the prevention of malaria, the improvement in health of the agriculturist and the cultivation of the land were all intimately connected, and that what helped the one would improve the other.

### Alfred Russel Wallace

Alfred Russel Wallace, who discovered the principle of natural selection independently of Darwin, has died in his ninety-first year. He was born at Usk in Monmouthshire and adopted the profession of land surveyor. At an early age he was attracted to natural history, in which he took a great interest. In 1847 he undertook a voyage to South America as a naturalist and sent home many communications to scientific societies during the four years. In 1854 he went on an expedition to the Malay Archipelago, where he remained for eight years. Here he laid the foundation of the principle of geographical distribution which has since been known as "Wallace's law," and he began to study the question of the origin and mutability of species. While pondering over these subjects he recalled the principles laid down many years before on the limitation of the human population by Malthus, and then the idea of natural selection came to him as by a sudden inspiration. About the same time Darwin was led to the same discovery, curiously from reading the same work. They both sent papers on the subject to the Linnean Society, each unaware of the other's work. The society decided that the two papers should be read at the same meeting, which took place July 1, 1858. To the end of his life he took a great interest in biologic subjects and was also an ardent democrat and social reformer.

### The Prevention of Glass-Workers' Cataract

Sir William Crookes, the eminent scientist, communicated to the Royal Society some experiments in which he has been engaged for six years with the object of providing protecting glasses to prevent damage to the eyes of glass-workers and others exposed to severe glare. The problem was to find a means of cutting off the heat-rays that are injurious to the eyes of glass-workers, in some cases predisposing to cataract, if not actually causing it. The experiments were conducted by mixing various metallic oxids with soda-glass. The metals used were cerium, chromium, cobalt, copper, iron, lead, manganese, neodymium, nickel, praseodymium and uranium. Each specimen of glass was cut and polished in plates 2 mm. thick. The glass was tested by the spectroscope to determine which of the light-rays were cut off, and by a specially devised instrument to find out what proportion of heat-rays was arrested. Sir William Crookes succeeded in preparing a glass that cut off the chemical, the ultraviolet and the heat-rays, but he could not avoid some light-rays being also cut off. It was not an advantage to have absolutely colorless glass, because a very bright light such as that from white cliffs, expanses of snow and electric light was known to be injurious to the eye, and therefore a tinted glass combining good obstruction to heat radiation and to ultraviolet rays was the best to aim at. He had produced glasses which cut off over 90 per cent. of heat radiation, which were opaque to the invisible ultraviolet rays, and were sufficiently free from color to be capable of use as spectacles. Several glasses of the type described were demonstrated to the society, showing how a neutral tint could be produced by making use of both cobalt and nickel. In the course of the discussion that followed attention was drawn to the influence of potassium in glass in modifying the colors caused by the admixture of nickel oxid.

## PARIS LETTER

*(From Our Regular Correspondent)*

PARIS, Nov. 28, 1913.

### Dedication of the Monument to Professor Dieulafoy

November 23 the monument in memory of Professor Dieulafoy was dedicated at the Hôtel-Dieu, and placed at the entrance of the Trousseau Amphitheater where Dr. Dieulafoy taught for many years. Dieulafoy's favorite pupil, Professor Widal, in an interesting address retraced his master's glorious career as a scientist and teacher.

### Admission of Women into Administrative Offices of the Public Charities

The *Journal officiel* publishes an important circular addressed by the minister of the interior to the prefects with regard to the employment of women in the administrative offices of the public charities. Women are going to be necessary in the administration of the laws, which are about to become effective, with regard to aid to large families and to women in childbirth. The last-named law makes the giving of aid conditional on the observance of prescribed conditions with regard to rest and hygiene. Moreover, it especially favors mothers who during the period of aid nurse their children themselves. It is undeniable that women would be much better qualified to see that these conditions have been observed as far as is compatible with the demands of domestic life. While the aid of women is particularly desirable in this connection, the minister wishes to see it extended also to hospitals, where competent and well-instructed women can give very valuable services with regard to the management of the establishment, quality of the linen, cooking and improvements in the quarters reserved for women and children and in maternity services.

### Kneading Bread by Machinery

The law subjects a baker to higher taxation if he installs a kneading machine. At the last session of the council on hygiene, the question of the taxation of bakers was taken up and a resolution was passed that bakers who used kneading machines should not be more highly taxed than those who used hand kneading. Such a tax is unjust because bakers who use machinery bring about two important improvements: In the first place, they are able to furnish their customers clean bread, free from the impurities introduced by hand kneading; and in the second place, the change is favorable to the health of the journeymen bakers, since the kneading is the most health-endangering part of the work.

### The Inventor of the Steam-Engine a Doctor of Medicine

The real inventor of the steam-engine was Denis Papin, who was born in Blois in 1647. James Watt and the others who perfected the engine only developed the ideas of Papin, who was the first to recognize the elasticity of steam. The name of *marmite de Papin* (Papin's kettle) is still applied to a thick kettle furnished with a valve which is hermetically closed by a weighted lever. When the interior pressure of the steam becomes sufficient, the valve opens. Papin first applied this principle to culinary uses. Meats were quickly and cheaply cooked by this apparatus. M. Charles Nordmann, astronomer at the Observatory of Paris, has rediscovered Papin's work, published in 1682, which bears as its subtitle: "Machine Invented by M. Papin, Doctor of Medicine." Papin was a physician and took his degree at the University of Paris.

### Celebration of the Twenty-Fifth Anniversary of the Pasteur Institute

The twenty-fifth anniversary of the Institut Pasteur was celebrated November 13. Speeches were made by the President of the Republic and other notables. Dr. Roux, director of the Pasteur Institute, in his speech, showed how the combined force of creative imagination and rigorous experimental methods permitted Pasteur to found a new branch of chemistry, to solve the question of spontaneous generation, and to illumine the mystery of fermentations and of infectious diseases. Not being a physician, Pasteur hesitated long to take up the subject of infectious diseases and perhaps never would have done so if the great chemist Dumas had not influenced him to seek for a remedy for the silkworm disease which was ruining the silk industry. Pasteur, encouraged by his success with the silkworm disease, took up the study of contagious diseases of the higher animals, and from 1880 to 1885 made a series of remarkable discoveries: the attenuation of virus, vaccination against anthrax and the preventive treatment of rabies. The application to man of the antirabic treatment aroused enthusiasm. The Académie des Sciences undertook to raise a public subscription for funds to build an institute where Pasteur could pursue his researches and apply his discoveries. Such was the origin of the Institut Pasteur, which I have mentioned in a previous letter (The Journal, Oct. 4. 1913. p. 1307).

### Presence of the Spirochaeta Pallida in the Blood of General Paralytics

Dr. C. Levaditi has undertaken the investigation of the question whether syphilitic infection in general paralytics is limited to the brain or if it is diffused through the blood and the various organs with accidental localization in the cerebral cortex. November 10 he read before the Académie des sciences the results of his researches in collaboration with Dr. Danulesco. The blood of a general paralytic at the third stage, syphilitic fifteen years, was inoculated into the scrotum of a rabbit; at the end of 127 days there was a bilateral scrotal lesion. Ultramicroscopic examination showed many characteristic mobile spirochetes. The striking feature is the persistence of the parasite in the blood long after the beginning of the syphilis—fifteen years. Levaditi and Danulesco had had only one positive result in six trials (five paralytics and one tabetic). It seems, then, that the germ does not exist constantly in the general circulation. Perhaps it appears there only intermittently during the phases which precede or accompany the cerebral manifestations.

### The Student Locum Tenens

According to the law of 1892 on practice of medicine, a medical student who has finished his course may be authorized, without having taken the examinations, to practice medicine as a locum tenens, but it is necessary to obtain an authorization from the prefect. A recent investigation has shown that many such medical students are practicing without having asked or obtained authorization from the prefects. It has also been found that practice has also been carried on by foreign students who do not fulfil the conditions required for the state diploma for doctor of medicine, which alone gives the right to practice in France, as distinguished from the doctor's diploma from the university. A circular letter has, therefore, been addressed to the prefects, requiring them to see that the law is observed.

### The Glory of Pasteur

The Académie française decided yesterday that the subject of the contest in poetry in 1915 (prize, 4,000 francs, or $800) shall be "The Glory of Pasteur."

## BERLIN LETTER

*(From Our Regular Correspondent)*

Berlin, Nov. 21, 1913.

### Personal

Professor Roemer of Marburg has been called to Greifswald to conduct the hygienic institute as the successor of Geheimrat Loeffler.

### The Struggle Between Krankenkasse and Physicians

Continued expressions of sympathy for their German colleagues are being published from medical societies, medical chambers, and medical faculties. A few days ago the Berlin medical faculty declared its solidarity with the German medical profession. According to newspaper reports, the governments of some of the federal states are endeavoring to influence the highest imperial authority, the office of the interior, to make a new attempt to bring about an agreement between the two parties. I regard this statement as improbable.

### Transfer of Destitute Insane from Great Britain

The following agreement has been reached between the German Empire and Great Britain regarding the transfer of destitute insane. Insane who belong in one country and come under the care of public charity in the other country may be transferred to their native country on demand of the foreign country, provided that since their last entrance into the foreign country not more than fourteen months have elapsed. This period is reckoned backward from the day on which the request for transfer reaches the government of the native country. The insane are to be transferred only after the native government has indicated its acceptance and designated the place of transfer.

### Coeducation

At the congress for juvenile education held at Breslau a few days ago, Professor Cohn discussed the difference of the sexes from his experience in Baden which in contrast to Prussia and other states of the empire, permits girls to attend the higher schools for boys. Cohn sent a number of questionnaires to the principals of schools with reference to their experience in coeducation, and discussed the answers which he had tabulated. Great interest attaches to the replies to the question whether erotic relations had developed between the boy and girl pupils. The answers are overwhelmingly negative. Cohn believes that this question can be treated with the greatest calmness, for the attraction of the sexes for each other will result in undesirable occurrences whether there is coeducation or not. Objectionable conduct will be quite as rare among coeducated pupils as among those not educated together; indeed it may be said that coeducation may contribute to lessen the tension between the sexes. Cohn draws the following practical conclusions from the collective investigation. Separate instruction may in itself be better in view of the different objects of interest for boys and girls, and even the vast American experience supports this view. In addition the greater readiness to fatigue in girls especially during the years of puberty, which is not noticed in boys, indicates the propriety of separate instruction. On the other hand, the objections against coeducation are not so great that it should be forbidden where it is desirable, because the small number of girl pupils does not permit the establishment of special schools for girls.

A long discussion followed the address in which a number of speakers opposed the method of coeducation. It was emphasized that these investigations were conducted on altogether too small material, and had also taken the wrong way to secure facts on which reliable scientific conclusions could be based. More extensive investigations must first be made before a complete scientific decision of this question could be reached.

### Death Rate of the German Empire in 1912

The Imperial Health Office has published the following statistics bearing on the frequency of certain important causes of death from about 400 urban communities. The number born living increased by 0.1 per cent. The increase, however, is found only among illegitimate births which amounted to 3.209, while the number of legitimate children born was 2,577 less. The number of stillbirths also increased by 100, which was wholly attributable to the illegitimate children. On the other hand, the birth rate had fallen from 256.6 per 10,000 in the previous year to 251.2. As a further unsatisfactory circumstance the number of stillbirths per 10,000 children born living amounted in the previous year to 322, but in 1912 to 324. The death-rate has fallen about 8.4 per cent., or 33,178. in contrast to 1911, which was very unfavorable in this respect. The death-rate sank from 16.32 to 14.60 per 1,000 of population. Especially the number of deaths in the first year of life was markedly reduced, compared with the previous year, by about 25.2 per cent. As a result the death-rate compared with 100 born living fell from 18.9 to 14.1.

As to the causes of death, an increase was observed in deaths from whooping-cough of 736, or 22.6 per cent.; from measles and rötheln of 160, or 4.8 per cent.; from diseases of the respiratory tract of 562, or 1.1 per cent.; from murder and manslaughter of 116, or 24.5 per cent.; from suicide of 443, or 6.9 per cent.; and as a result of accident of 390, or 4.2 per cent. On the other hand, there was a reduction in the number of deaths from gastro-intestinal catarrh and diarrhea, of 30,346, or 51.8 per cent.; from typhoid of 585, or 39.3 per cent.; from diphtheria and croup of 1,123, or 16.6 per cent.; from scarlet fever of 259, or 9.4 per cent.; from puerperal fever of 83, or 5.8 per cent., and from tuberculosis of 725, or 1.7 per cent. The number of deaths from gastro-intestinal catarrh and diarrhea in children under a year old diminished more than a half, from 49,409 in the previous year to 24,129. The excess of births over deaths rose from 9.35 in 1911, to 10.51 in the year of this report.

## VIENNA LETTER

(*From Our Regular Correspondent*)

Vienna, Nov. 12, 1913.

### The Meeting of German Natural Scientists and Medical Men

A few weeks ago Vienna was the meeting place of the eighty-fifth annual congress of the Deutsche Naturforscher und Aerzte, which lasted eight days. More than a thousand papers were on the official list in the thirty-four sections, and more than five thousand members formed the audience. The gathering outgrew its original aim, and it must be said that as in medical literature many superfluous articles are written, so here numerous papers should not have been read, being of insufficient importance.

The analogy between human and mouse cancer was dealt with in a paper by Dr. Frankl of Vienna. Von Hausemann had rejected all conclusions drawn from the observations of cancer in the mouse until proof of the identity of human and mouse cancer was forthcoming. Dr. Frankl's experiments show that there is no essential difference between the cells of the cancers in man or mouse. The difference, which is chiefly histologic and biologic, does not contrevert the knowledge gained hitherto from experimental mouse cancer in its bearing on human cancer.

The relations between cancer and infectious diseases was the subject of a paper by Schmidt of Innsbruck. He does not believe in a living virus of cancer. He has found that the rule "cancerous ancestors, tuberculous offspring," and its reverse, "tuberculous ancestors, cancerous offspring," are very frequent. He also finds that the history of cancer patients rarely shows infectious diseases: In 44 per cent. of stomach cancers the "infection index" was 0. This peculiar hyperimmunity of cancerous patients is presented also in a refractory behavior of the organism toward vaccination with cow's lymph. The explanation might be found in the supposition that the serum after infectious diseases contains a relative protecting body against cancer.

The dosage of diphtheria antitoxin was investigated by Schick, Kassowitz and Busatti. They recommend the use of 100 units of antitoxin per kilogram of body-weight, in mild cases, and 500 units per kilogram in severe cases. Repeated injections are unnecessary.

Dr. Mall read a paper on spasmophilia in children. By variations of feeding he succeeded experimentally in producing hyperirritability of nerves in animals, which finally resulted in rachitic changes. He thus could prove the correlation of these two frequent conditions of childhood, and showed also the important rôle played herein by the parathyroid.

Taussig read a paper on endemic goiter in Austria. He showed that out of each thousand recruits presented for admission to the army twenty-nine had to be dismissed for goiter. Taussig believes that water derived from mountains is goiter-producing, by lacking an unknown substance, which controls the equilibrium of the thyroid gland. Free consumption of meat seems to be a very good remedy against this trouble; a vegetarian life seems to promote the goitrous tendency.

One of the most important papers was the report on syphilis and general paralysis by Nonne, who asserts that at present the problem is not yet solved as to who will become tabetic or paralytic and who not. It is certain that both tabes and general paralysis of the insane are true syphilitic diseases. These patients are actively diseased. But it seems that there is a special genus of *Spirochaeta pallida* which has special affinity for the nervous system and produces syphilis of the meninges and the nerves. Even in very early cases one sometimes sees affections of the brain and its covers. These persons are predisposed to fall victims to general paralysis of the insane or to tabetic conditions.

Dr. Hock emphasized the necessity of conserving the first teeth of childhood in order to keep the mouth and jaws in a condition fit to receive the permanent teeth. In some cases it is advisable to remove, after the twelfth year of age, the first permanent molar tooth, which by this time has served its object. This removal gives space for the wisdom-tooth to break through without the usual trouble. Dr. Hock believes that this simple procedure does away with a large percentage of dental caries otherwise so frequent.

The problem of mixing human races with each other was discussed by Fischer, who said that although little experimental work is existing in this field, nevertheless it could be shown that mendelian laws were obeyed. Racial features were just as well inherited as parental general features, and they were often split, but not lost in the grandchildren. In a similar paper Abel showed that as yet there is no single absolute proof known for a real morphologic atavism in animals. The law may be formulated that an organ which in the course of ontology (during development of the genus) has become rudimentary never regains its original strength. Even if later on its presence should be required, it is replaced by an analogous organ.

The metabolism of iron in the body of the new-born was studied by Drs. Langstein and Edelstein (Berlin). They found that within the first week of life the infant loses iron by means of the bowels and that not until later is the metal retained and stored up from the food.

The importance of water in the metabolism of infants was shown by Dr. Lederer. He found that the human (and animal) organism is subjected to a gradual loss of water normally. Children with disturbances of the alimentary harmony show increased contents of water in the organs; also those with the exudative diathesis with their tendency to frequent catarrhs. The disturbance of water metabolism is thus one of the chief sources of disease in childhood (adenoid ring). This investigation proves the correctness of the ancient supposition of "constitution," which now has been placed on a safe chemical-physical base.

Interesting papers were read also at the meeting of the psychologists; one by Kafka of Munich, especially, aroused much discussion. This investigator studied the psychology of animals, and demands that careful attention be paid to this important part of biology, as it offers valuable clues to the understanding of human psychology as well as for general knowledge of the development of conscience. Analogy with human psychology could not be disregarded except for unscientific reasons.

The fight against malaria in Austria was described by Dr. von Celebrini of Trieste. He advised the regular intake of quinin daily during the malaria season, at least 5 grains per dose for adults. Children must be treated too, otherwise the whole campaign is useless. Mechanical protection from *Anopheles* is worthless and costly; best is the destruction of insects, practiced according to their biologic conditions in the affected districts.

Other papers were read on the use of india-rubber for covering warships; the future of our earth; the theories of the tides; the refutation of Newton's law of gravitation; modern methods of stereoscopic photography; paleontology and human development; the color-sense of animals; the tectonic structure of the Alps; the chemical substance used by Hannibal to dissolve the rocks of the Alps, etc. After the congress was over, a large number of visitors remained in Vienna and availed themselves of the opportunity of visiting the medical and scientific institutes of this city.

## *Marriages*

Francis Elsworth Hypes, M.D., Dunreith, Ind., to Miss Lynn Wiltshire of New Paris, O., at Dayton, O., November 24.

William Campbell, M.D., Corona, N. Y., to Miss Minnie Louise Murrell of Rockaway Beach, L. I., N. Y., November 26.

John Godfrey Thompson, M.D., to Miss Frances Lucile Young, both of Helena, Mont., November 26.

Joseph Edward Miller, M.D., Wayland, Mo., to Miss Lela Fern Harris of Sullivan, Ill., November 18.

William Leake Mann, Jr., M.D, U.S.N., to Miss Ann Fegan of Dallas, Tex., November 25.

John Hooe Iden, M.D., U.S.N., to Miss Marianna D. Brazil! at Portsmouth, R. I., November 22.

Ralph Crissman Brown, M.D., to Miss Marion Phoebe Mills, both of Chicago, December 2.

Orvan Charles Adkins, M.D., to Miss Ruth Emeline Miller, both of Elnora, Ind., November 21.

Frederick V. Burnham, M.D., Detroit, Mich., to Miss Nellie Berg of Boston, November 26.

James W. Thomas, M.D., to Miss Rose Murdoch, both of Nehawka, Neb., November 23.

E. J. Donohue, M.D., to Miss Elizabeth Mueller, both of Antigo, Wis., November 26.

Leo Kessel, M.D., to Miss Evelyn Goldsmith, both of New York City, November 24.

# Deaths

**John Guerrant Trevilian, M.D.** Medical College of Virginia, Richmond, 1861; *a Fellow of the American Medical Association*; surgeon in the Confederate service throughout the Civil War and at its close brigade surgeon and chief of field hospitals; chief surgeon of the Confederate Home and medical department of the city almshouse at Richmond; died at his home in that city, November 24, aged 73. The medical profession of Richmond met with the Richmond Academy of Medicine and Surgery, November 25, *to take suitable action regarding the death of Dr. Trevilian.*

**Thomas S. Crofford, M.D.** Hospital College of Medicine, Louisville, 1876; a member of the Tennessee State Medical Association, and American Association of Obstetricians and Gynecologists; pro[illegible] in Memphis Hospital Medical College; [illegible] Joseph's Hospital and obstetrician to the Memphis City Hospital; proprietor of Crofford's Sanitarium, Memphis; prominent as a surgeon of Memphis for many years; *for the last year a resident of California; died at his home* in Los Angeles, November 24, from pneumonia, aged 54.

**Henry Matt. Winans, M.D.** Medical College of Ohio, Cincinnati, 1880; a Fellow of the American Medical Association; a member of the State Board of Education; one of the founders and president of the People's Trust Company, Muncie, Ind.; prominent not only as a practitioner, but as a financier and philanthropist; died in a hospital in Muncie, November 23, *from malignant disease of the throat*, aged 58. At a special meeting of the Delaware County Medical Society, November 24, *resolutions of regret and sympathy were unanimously adopted.*

**John Howe Clark, M.D.** Medical Director and Rear Admiral, U. S. Navy (retired); Harvard Medical School, 1862; who since retirement had lived in Amherst, N. H.; a surgeon of the navy since 1861 and in 1893 appointed medical director and president of the *Navy Examining Board; died at his home in* Amherst, *December 1, from cerebral hemorrhage*, aged 76.

**Oliver D. Simmons, M.D.** Maryland Medical College, Baltimore, 1906; Atlantic Medical College, Baltimore, 1909; a member of the Medical and Chirurgical Faculty of Maryland; president of the Calvert County Board of School Commissioners and twice a member of the House of Delegates; died at his home near Bowens, November 25, aged 45.

**Robert Alvin Walker, M.D.** University of Wooster, Cleveland, 1879; of West Monterey, Pa.; a Fellow of the American Medical Association and once president of the Clarion County, Pa., Medical Society; a member of the General Assembly in 1905 and 1906; died suddenly while making a professional call in Monterey, November 26, aged 59.

**William A. B. Treadway, M.D.** University of Michigan, Ann Arbor, 1883; *a Fellow of the American Medical Association*; formerly a member of the medical staff of the Rhode Island State Hospital and the Givens Sanitarium, Stamford, Conn.; died in the Stamford Hospital, *November 18, from pneumonia*, aged 54.

**William Wright Williams, M.D.** Rush Medical College, 1871; Bellevue Hospital Medical College, 1874; said to have been the oldest practitioner of Mattoon, Ill.; died in the University Hospital, Chicago, November 20, eighteen days after an operation for the removal of the prostate gland, aged 66.

**Frederic Matthew Helbig, M.D.** Bellevue Hospital Medical College, 1890; a Fellow of the American Medical Association and a member of the New York State Board of Pharmacy; died at his home in New York City, November 26, *from peritonitis*, aged 47.

**John Decker Frazer, M.D.** University College of Medicine, Richmond, 1902; a Fellow of the American Medical Association, and a practitioner of Danton, Va.; aged 37; was dragged to death by a runaway horse in Orange County, Va., November 26.

**Marshall P. Austin, M.D.** University of Michigan Homeopathic College, Ann Arbor, 1881; formerly of *Minneapolis*, Minn., but for about ten years a resident of Medina, Mexico, died in that city, November 20, from pneumonia, aged 64.

**Gideon Mitchell Duncan, M.D.** McGill University, Montreal, 1871; once president of the Canadian Medical Association; died at his home in Bathurst, N. B., October 5, aged 71.

**Gaston Graham Bell, M.D.** University College of Medicine, Richmond, Va., 1900; died at his home in Oriental, N. C., November 22.

**Gertrude Harper Hammond, M.D.** New York Medical College and Hospital for Women, 1867; for more than fifty years a practitioner of Rockland County, N. Y.; died at her home in Spring Valley, November 19, aged 82.

**Edward Bowen Finney, M.D.** Jefferson Medical College, 1861; of Onancock, Va.; died in St. Joseph's Hospital, Baltimore, *November 24, from peritonitis following an operation for appendicitis*, aged 77.

**George Edmond Baril, M.D.** Victoria University, Coburg, Ont.; for twelve years president of the Educational Commission of Hochelaga; died suddenly at his home in Montreal, September 20, aged 54.

**George J. Parker, M.D.** Western Reserve University, Cleveland, 1847; *for many years a practitioner of Lexington, Mich.; died at the home of his daughter in Port Huron, Mich.*, November 23, aged 90.

**Edgar Grove Yowell, M.D.** Ohio Medical University, Columbus, 1901; of Newark, O.; died at the home of his mother near Hebron, O., November 4, from pulmonary tuberculosis, aged 39.

**Harvey W. Cory, M.D.** Hahnemann Medical College, Chicago, 1890; *proprietor of a sanatorium in Marion, Ind.; died at his home in that city, November 23, from malarial fever*, aged 47.

**Miles Dennison Goodyer, M.D.** University of Michigan, Ann Arbor, 1868; a member of the Medical Society of the State of New York; died at his home in Groton, November 25, aged 69.

**Albert Curtiss Brown, M.D.** Bellevue Hospital Medical College, 1873; *for fifteen years a practitioner of Chicago*; died at his home in North Yakima, Wash., November 6, aged 64.

**Louis Prosper La Fleche** (license, Maine, years of practice, 1893); a Fellow of the American Médical Association; died at his home in Caribou, Me., September 19, aged 45.

**Daniel Webster Bashore, M.D.** University of Pennsylvania, Philadelphia, 1865; *died at his home in West Fairview, Pa., November 18, from cerebral hemorrhage*, aged 78.

**Titus E. Yerkes, M.D.** Rush Medical College, 1864; a Fellow of the American Medical Association; died at his home in Upper Alton, Ill., November 27, aged 77.

**Ash D. Bennett, M.D.** Pennsylvania Medical College, Gettysburg, 1860; *of Mahaffey, Pa.; died at his old home in Clearfield, Pa., about November 29*, aged 77.

**George Walke Wallace, M.D.** University of Virginia, Charlottesville, 1867; a Confederate veteran; died at his home in Norfolk, Va., November 9, aged 68.

**John Windell, M.D.** University of Pennsylvania, Philadelphia, 1854; died at his home in Hamorton, Pa., August 5, *from cerebral hemorrhage*, aged 87.

**Harry S. Nolte, M.D.** Baltimore University, 1898; *a member of the Michigan State Medical Society; died at his home in* Reed City, about November 13.

**Andrew A. J. Burkett** (license, *Louisiana*); *for many years* a practitioner of Lafayette Parish; died November 20, from heart disease, aged 64.

**Albert E. Staudacher** (license, Indiana, 1899); a practitioner since *1865; died at his home in Terre Haute, Ind.*; September 16, aged 79.

**John Hinton Lowry, M.D.** Rush Medical College, 1877; formerly of Sterling, Ill.; died at his home in Reedley, Cal., about November 5.

**William Jones** (license, Iowa, years of practice, 1886); died *at his home in Volga, October 19*, from carcinoma of the stomach, aged 70.

**E. W. Davidson, M.D.** *Kentucky School of Medicine*, Louisville, 1899, died at his home in *Tampa, Fla.*, November 18, aged 36.

**Joseph A. Hatzfield, M.D.** Hahnemann Medical College, Philadelphia, 1881; died at his home in Pueblo, Colo., November 14, aged 67.

**Charles H. Lee, M.D.** Hahnemann Medical College, Philadelphia, 1864; *died at his home in Newcastle, Pa.*, November 12, aged 73.

**Calvin McMillin, M.D.** Western Reserve University, Cleveland, 1867; died at his home in Cleveland, November 15, aged 91.

**Corwin James Steele, M.D.** Rush Medical College, 1888; died at his home in Hustler, Wis., November 13, aged 54.

**Augustine Catherine Haub, M.D.** *Boston University*, 1893; died at her home in Boston, November 14, aged 53.

# *The Propaganda for Reform*

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

## TEXAS GUINAN

### Another Fraudulent Obesity "Cure"

Quackery is disreputable and vicious, because, as a rule, it not only defrauds but also trifles with health and life itself. Occasionally there are varieties of quackery that attack only the purse. The Texas Guinan obesity "cure" is one of these.

Texas Guinan is an actress. Her connection with the obesity cure that bears her name is explained briefly in the following news item that appeared in the papers early in August of this year:

> "DENVER, Colo., Aug. 4.—Marjorie Hamilton has been deposed as the light in the lives of fat women who seek to reduce, and a new queen reigns in her stead, the Denver stage favorite, Texas Guinan, according to a telegram received from that young woman to-day.
>
> "The message says she has been paid $50,000 by Walter C. Cunningham, Marjorie Hamilton's husband, and head of the fat reduction bureau, and H. D. Turner of Los Angeles, for the method she says she used in reducing herself from 204 pounds to 134."

Most of THE JOURNAL's readers will remember its exposure of "Marjorie Hamilton's Obesity Cure" and the individual who operated it, Walter C. Cunningham. The federal authorities followed up this exposure, and Cunningham and his wife, Marjorie, were indicted by the federal grand jury and later arrested.

#### A RETROSPECT

To recapitulate briefly: In 1906 Cunningham is said to have served a term of eight months in jail in Minneapolis for fraudulently listing fees when he was "president and manager" of a real-estate business of that city, conducted under various names. After completing his jail sentence, Cunningham, it is said, went to Rochester, N. Y., where he became associated with the Clark-Adkin-Neal syndicate, which has exploited various mail-order medical fakes. At this time he is said to have married Evelyn Burlingame and soon thereafter to have gone to Buffalo, where he started a mail-order business, selling "beauty treatments." The business was conducted in his wife's name. In 1909 Cunningham transferred his operations to Chicago, where, after a brief period of employment with the Currier Publishing Company, he started a mail-order bust-developer and wrinkle-eradicator concern under the name of his wife, Evelyn Cunningham. In 1910 Cunningham sold his interest in this concern and incorporated another one along the same lines—the Della Carson Company—later disposing of this also. In the meantime he was divorced from Evelyn, and on Sept. 19, 1911, married Marjorie Hamilton—the "Calendar Girl"—who, on Sept. 6, 1911, had obtained a divorce from her previous husband, William Kerting. Kerting, according to the newspapers, sued Cunningham for $25,000 for alienating his wife's affections. At the time of his marriage to Marjorie Hamilton, Cunningham had left Chicago and had opened a new establishment in Denver. Here he exploited the "Marjorie Hamilton Obesity Cure," the "Princess Tokio Beauty Company" and the "Cunningham Mail-Order School." THE JOURNAL's exposure of these three frauds made them unprofitable, and the next the public heard of Cunningham's activities was that given in the newspaper item reproduced above.

As late as Aug. 5, 1913, the newspapers reported that Marjorie Hamilton was about to get a divorce from Cunningham, charging that this gentleman "did everything mean, even to punching her face." Marjorie, in an interview published in a Chicago newspaper at that time, expressed herself thus:

> "Mr. Cunningham has another scheme now for money making. I'd advise the people who are dealing with him to look out. He has advertised his successes very widely, but he has kept his failures intensely quiet. He is like a balloon that would blow up in a moment if a pin should stick it."

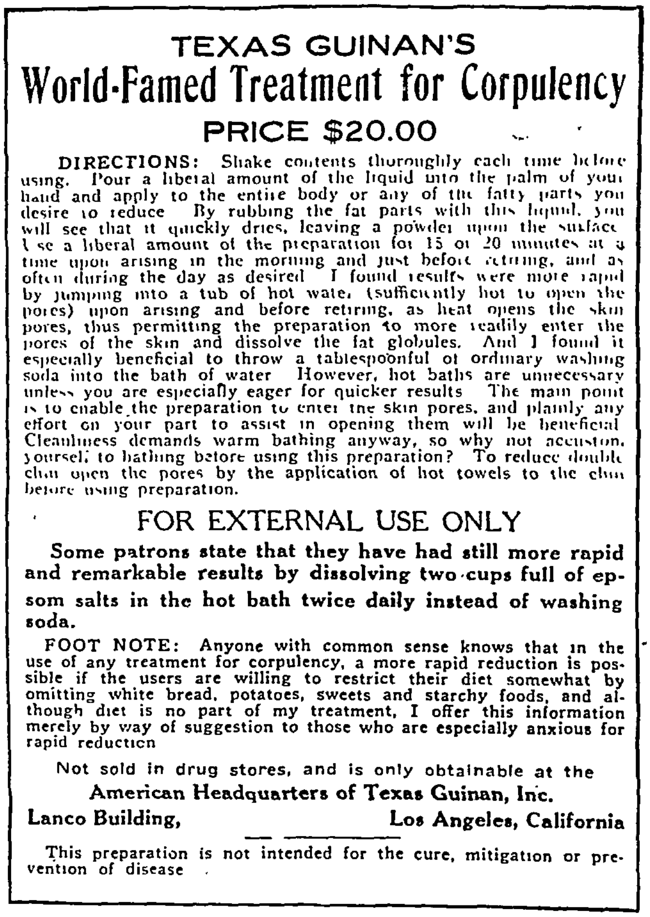
We have, then, historically considered, the following enterprises of Mr. Cunningham:

North American Land Co.: fraudulent real estate.
Evelyn Burlingame: mail-order beauty treatment.
Evelyn Cunningham: mail-order bust developer and wrinkle eradicator.
Della Carson: mail-order bust developer, wrinkle eradicator and fat reducer.
Marjorie Hamilton: mail-order fat reducer.
Princess Tokio: mail-order beauty treatment.
Texas Guinan: mail-order fat reducer.

#### TEXAS TO THE RESCUE

Texas Guinan comes to the obese public—especially the female portion of it—with this alluring challenge:

> "I have at last, finally and forever, conquered the mystery of harmlessly reducing flesh! I challenge the world to produce any person I cannot promptly take down in weight, and guarantee to make slender quickly."



TEXAS GUINAN'S

World-Famed Treatment for Corpulency

PRICE $20.00

**DIRECTIONS:** Shake contents thoroughly each time before using. Pour a liberal amount of the liquid into the palm of your hand and apply to the entire body or any of the fatty parts you desire to reduce. By rubbing the fat parts with this liquid, you will see that it quickly dries, leaving a powder upon the surface. Use a liberal amount of the preparation for 15 or 20 minutes at a time upon arising in the morning and just before retiring, and as often during the day as desired. I found results were more rapid by jumping into a tub of hot water (sufficiently hot to open the pores) upon arising and before retiring, as heat opens the skin pores, thus permitting the preparation to more readily enter the pores of the skin and dissolve the fat globules. And I found it especially beneficial to throw a tablespoonful of ordinary washing soda into the bath of water. However, hot baths are unnecessary unless you are especially eager for quicker results. The main point is to enable the preparation to enter the skin pores, and plainly any effort on your part to assist in opening them will be beneficial. Cleanliness demands warm bathing anyway, so why not accustom yourself to bathing before using this preparation? To reduce double chin open the pores by the application of hot towels to the chin before using preparation.

FOR EXTERNAL USE ONLY

**Some patrons state that they have had still more rapid and remarkable results by dissolving two cups full of epsom salts in the hot bath twice daily instead of washing soda.**

**FOOT NOTE:** Anyone with common sense knows that in the use of any treatment for corpulency, a more rapid reduction is possible if the users are willing to restrict their diet somewhat by omitting white bread, potatoes, sweets and starchy foods, and although diet is no part of my treatment, I offer this information merely by way of suggestion to those who are especially anxious for rapid reduction.

Not sold in drug stores, and is only obtainable at the

**American Headquarters of Texas Guinan, Inc.**

**Lanco Building, Los Angeles, California**

This preparation is not intended for the cure, mitigation or prevention of disease.

Fig. 1.—Photographic reproduction of the directions on the label attached to Texas Guinan's thirty cents' worth of alcohol and alum. The stuff is purchased on the understanding that no massage, dieting and exercise are necessary!

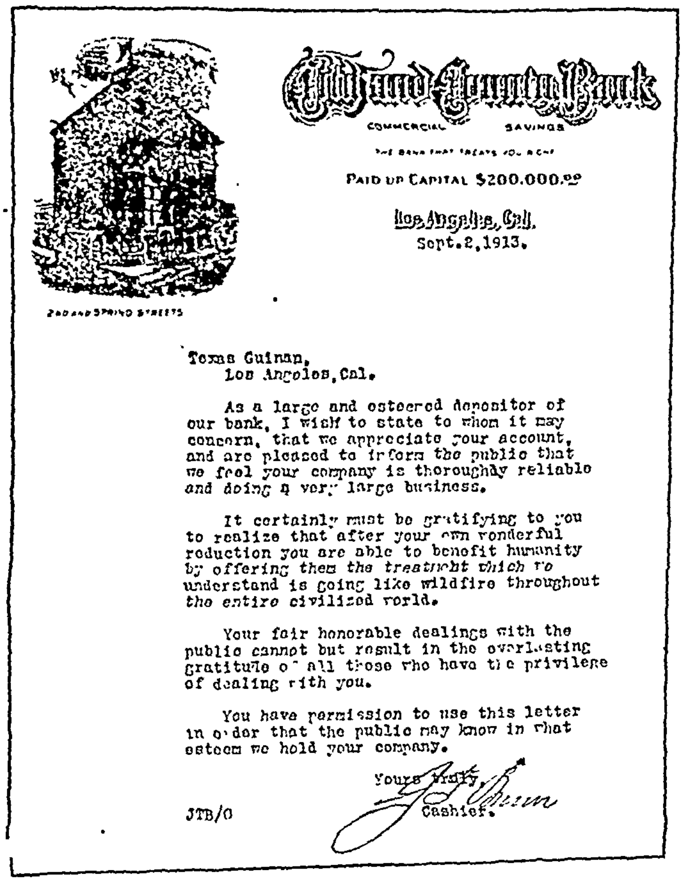
Like most obesity cures of the so-called drugless variety, the Texas Guinan humbug is "entirely different" from anything else! To quote: "It is not like the Marjorie Hamilton treatment—as absolutely different as day from night." Neither, according to Texas, is the treatment anything like the Dr. Bradford treatment, the Dr. Turner treatment, the Susanna Cocroft treatment, the Dr. Kellogg treatment, the Dr. Spillinger treatment, the Burns Belt or Hattie Beal treatment, nor like "Fat Foe," "Fat Off," "Berledets" or the Annette Kellerman treatment.

Texas says she has to laugh when she realizes how much money she squandered "trying the various fat-reducing treatments so heavily advertised by charlatans of the American Medical Association." In fact, she advises her fat sisters, "Tell the quack A. M. A. doctors and specialists to go hang."

### THE COMPLETE LETTER WRITER OF QUACKERY

It is an education in quackery to receive a complete set of the advertising matter, follow-up letters, booklets etc., sent out by Cunningham, or shall we say Texas? The booklet which those who answer the advertisements receive, is in itself a gem of impudence and mendacity. It contains various pictures of Texas Guinan in different varieties of stage dress and undress—fat, lean and medium. In it the lady tells how she was about to lose her position because she was getting too fat. "In tights I was a sight at 204 pounds," she says, and publishes a picture to prove it. Mr. Shubert, the theatrical gentleman, we are told, patted her on the shoulder "and led me quietly to the door leading out of the private entrance of his office." Thus cast into outer darkness, she determined to remove her surplus fat, and finally "out of the chaos came an inspiration."

She followed out the "inspiration" and took off 17½ pounds in ten days—we have her word for it! Joy returned! "I was found dancing before the mirror, singing as a full-throated field lark sings at dawn." Day by day, she says, she saw her "limbs that had been so big and ugly and cumbersome regain their lost slimness and beautiful lines;" she saw her "big bust . . . slowly subside back to its original shape"; her abdomen "lost its swollen and unnatural appearance"; in fact, "the days passed like happy dreams." Naturally, she went back to Mr. Shubert, who, with a due appreciation of poetic justice, at once "dictated a contract that made my eyes stick out."



City and County Bank
COMMERCIAL SAVINGS
The Bank that Treats You Right
Paid up Capital $200.000.00
2nd and Spring Streets

Los Angeles, Cal.
Sept.2,1913.

Texas Guinan,
Los Angeles, Cal.

As a large and esteemed depositor of our bank, I wish to state to whom it may concern, that we appreciate your account, and are pleased to inform the public that we feel your company is thoroughly reliable and doing a very large business.

It certainly must be gratifying to you to realize that after your own wonderful reduction you are able to benefit humanity by offering them the treatment which we understand is going like wildfire throughout the entire civilized world.

Your fair honorable dealings with the public cannot but result in the everlasting gratitude of all those who have the privilege of dealing with you.

You have permission to use this letter in order that the public may know in what esteem we hold your company.

Yours truly,
Cashier.

JTB/O

Fig. 2.—Some banks are willing agents of quackery. The City and County Bank of Los Angeles describes as "fair, honorable dealing" a business which sells, under fraudulent claims, thirty-cents' worth of simple drugs for twenty dollars.

### A REQUEST FROM A LEAN MAN

Being desirous of finding out all that could be found out about Mr. Cunningham's latest venture, the member of The Journal staff in charge of this department wrote the following letter to Texas Guinan:

> "Dear Madam: Please send me your new book that is free and oblige."

The name signed was one of several assumed in writing for quack literature; no prefix, "Miss" or "Mrs.," was put before the signature. This point is mentioned because, as will be seen later, this short, non-committal, uninforming, unemotional. strictly business-like note from a lean man was to bring a series of heart-to-heart letters from Texas Guinan. "My dear friend" wrote Texas—but let her speak for herself:

> "I am sincerely glad to get personally acquainted with you through your reply to my advertisement. I am positive it is going to prove a friendship that will result in a world of boundless happiness for you, of a deep, sincere unforgetting gratitude on your part for the great, glorious, precious new liberty that will be yours after you have been forever released from the cruel prison of Fat that has so long held you captive; when you will arise in the morning and greet each beautiful new-born day with a glad song *upon your lips instead of a sigh*; when you will glow from head to foot with a thrilling exultation of becoming slender day by day, actually seeing with your own eyes the superfluous flesh melt away; and instead of the flabby ungainly lines, the new and bewildering grace of youth will steal as if by magic over your entire form."

The "bewildering grace of youth" was an appealing promise —to a lean man of 40—and the enthusiasm of Texas was contagious.

> "Listen, dear friend: I am so wildly enthusiastic over my world-thrilling, perfect and positive fat reducer that I am madly impatient for every fat human being in the universe to get the wonderful benefits of it right away!"

"Madly impatient" is good. Why this mad impatience, may be explained by the following paragraph that occurs a little further along in the letter:

> "I am a woman, and in this thing heart and soul, out of the great joy it has brought me both to be slender and to see all others slender, so if you will fill out the enclosed guarantee order blank and send it at once, with $20.00, there will be sent you immediately under plain cover, the complete guaranteed Texas Guinan positive fat reducing treatment, of which you have never dreamed, and which the world has never before seen advertised in America."

For a paltry $20 Texas was "madly impatient" to send her unfailing treatment! *And how simple and harmless it was to prove!*

> "With this absolutely unfailing fat reducer, let me firmly impress upon you that you have no internal medicine to take, no nauseous pills, tablets, or powders, no exercise of any kind—not one, no tortuous massage, no masks or apparatus, no rollers, none of the old, moth-eaten, worn-out, silly, senseless, daily self-denial, or third degree methods. I guarantee all this, and on the day you receive the treatment you will yourself be happily aware that you have at last found the only real and rational treatment known to the world's science."

And, after dilating on the evils and tortures of fatness:

> "After the dark hours, dear friend, comes the dawn. This dawn is now for YOU!"

Then came the peroration and the letter closed:

> "Hoping to receive your $20.00 order as soon as possible, I am, Your Deeply Sincere and Sympathetic Friend, Texas Guinan."

### THE SECOND LETTER COMES

Four days after the first letter was received, Letter No. 2 arrived, in which Texas says:

> "I am puzzled! More puzzled than disappointed at failing to get a warmly enthusiastic response from you before now."

She need not have been puzzled, as she failed to allow sufficient time to elapse between the first and second letters for an answer to her first letter to reach Los Angeles from Chicago, even had it been written at the earliest possible moment. Possibly Miss Guinan expected a telegram.

> "Well knowing your inmost yearning, burning desire to be slender, and feeling sure you fully realize my positive treatment will make you so, I even expected your Rush Reply by Special Delivery."

Evidently the trouble lay in the letter sent from The Journal office. It was too confiding, too personal, for Texas says:

> "Truly, from the way you answered my advertisement, I felt positive you were Intensely in Earnest in your great longing to be rid of your fat."

Apparently, too, the once obese actress had read into the letter that was sent her, something that was certainly never intended, for we read:

> "You know there's sometimes a Wireless System of Sympathetic Understanding between human beings. Your letter, strangely enough, filled me with the almost uncontrollable desire to Rush this

Positive Reducer to you at Once; to even take it to you myself; to get on the train and go to you with it and remain with you for several days. . . ."

Evidently on thinking over the matter more carefully, Texas Guinan controlled her "almost uncontrollable desire," and instead of coming to Chicago in person, sent the letter—which was probably just as well. Yet there surely is no doubt that the lady is much in earnest.:

> "When I electrified my friends and admirers and all the theatrical world by my quick transformation from fat-girl to thin-girl: When I stunned to speechless Surprise and Satisfaction that Great Manager Mr. Shubert (whose former criticism of my over-weight had stung me to the soul)—when I Dazzled him with my fresh, new, fairy slenderness of figure, my lithe-limbed, small-waisted winsomeness from head to heal [Spelling original with Texas—Ed.]—why, dear friend, the Happy Scene it made when I presented myself before him, a New-Born, Superbly Sculptured Being and—Presto, I Stepped Across the Thrilling Threshold of 'Stardom.' Ah, my friend, no change, no scene, can e'er efface, my mind's impression of that time and place."

All of this preliminary to great "offer"; to the "one chance to save $10 on the Texas Guinan Positive Fat Reducer." For a mere $10 it was possible for the more or less cadaverous male who received this letter to get a preparation that, "from the very moment you receive it, There Is No Power on Earth That Can Keep You from Losing Flesh Rapidly . . ." The change that he would undergo would be remarkable:

> "Your chin—throat—arms—abdomen—hips—thighs and lower limbs are immediately destined for almost unbelievable alteration; your enchanting, new and graceful willowness more noticeable every blessed day . . ."

### LETTER NUMBER THREE

And with this wonderful promise, Texas closes her letter, from "Yours for New Youth and a New Deal with Destiny." With man-like perversity, even this letter remained unanswered, and as a result, Letter No. 3 came in due time, and in this Miss Guinan became even more personal:

> "Pardon me, dear, you may think me awfully conceited, but I AM a bit proud of what great critics have said in the press about me and my newly made-over form. You, too would be—for we are only women after all—and Beauty and Admiration are a part of our very lives, aren't they, dear!"

Almost uncanny are the powers of Texas:

> "But I can see you in my mind's eye today, Dear Friend, as you really are."

Here we are afraid Texas is mistaken. If she really could see her "dear friend" as he is, she would have instructed her corps of typists to remove his name from the mailing-list and charge up to profit and loss the stationery and postage already expended. Still it was hard to refrain from sending the $10, when for this small sum such a product would be sent.

> "BEHOLD! I believe I have right in my hand a treatment designed to make you Beautifully Sinuous, Fascinatingly Slender and Adorable! I believe I have right in my hand the power to give you back the Glory of Youth's Lithsome Grace, a pliant, peerless, reed-like form."

"Reedlike form" seems particularly good as applied to the recipient of this letter; the only criticism offered is that it should have applied to the present instead of the future. Nevertheless and notwithstanding the fact that Texas closed her letter "with sincere, Sisterly Solicitude," the $10 was not sent.

### THEN THE FOURTH LETTER

One might have imagined that after three such pleading epistles, Miss Guinan would feel that she was indeed casting her pearls before swine. But no, Letter No. 4 came strictly on time, with the explanation:

> "As long as you are still among the Piteous Prisoners of Fat, fat-girded, fat-manacled, fat menaced, I cannot find it in my heart to forget you! Really, truly, sincerely, dear, I cannot for the life of me, blot out of my mind, the awful unrest, the dull, desperate unhappiness you must feel!"

As has been surmised, the letter that brought this flood of correspondence from Miss Guinan was not sufficiently impersonal.

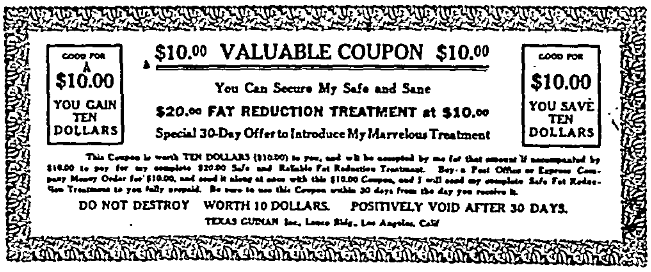
> "Your answer to my advertisement was, in itself, full of pathos to me, for I understood it through and through!"

Unlike the lady in Mr. Kipling's poem, Texas, it seems, did understand, and having understood, exhibits an "all-conquering sympathy for you that makes me forget the sordid money part of it all." She has a "great surprise" that will make it Doubly Easy and Even Profitable for you to grow slender with lightening [More original spelling.—Ed.] speed." This is it:

> "Here, my dear, I am making you a most Sisterly Proposition! I could not be more liberal if I were your own flesh and blood!"

The "sisterly proposition" is an offer of the Texas Guinan $20 "obesity cure" for the "small price of $5." All she asks is that you send in "the names and addresses of five fat men or women," which Miss Guinan considers "worth $15." This, the fourth letter, begins to exhibit a spirit of doubtfulness, as though its writer was slowly becoming convinced that the person to whom it was addressed did not think much of the Texas Guinan "obesity cure." To dispel any growing skepticism, we are told that should we stop a moment and reason we must inevitably conclude that every statement Texas Guinan has made regarding her cure "must be true, because my reputation is at stake. I am traveling the country starring in 'The Passing Show of 1912,' backed by Mr. Shubert, America's greatest theatrical manager." And yet we receive signed letters from Texas Guinan from Los Angeles!

> "I would expect to be mobbed at the stage door as I finished my performance, if I deceived the fat burdened folks of America by selling them anything but a high class proven fat reducer."



GOOD FOR A $10.00 YOU GAIN TEN DOLLARS

$10.00 VALUABLE COUPON $10.00

You Can Secure My Safe and Sane

$20.00 FAT REDUCTION TREATMENT at $10.00

Special 30-Day Offer to Introduce My Marvelous Treatment

GOOD FOR $10.00 YOU SAVE TEN DOLLARS

This Coupon is worth TEN DOLLARS ($10.00) to you, and will be accepted by me for that amount if accompanied by $10.00 to pay for my complete $20.00 Safe and Reliable Fat Reduction Treatment. Buy a Post Office or Express Company Money Order for $10.00, and send it along at once with this $10.00 Coupon, and I will send my complete Safe Fat Reduction Treatment to you fully prepaid. Be sure to use this Coupon within 30 days from the day you receive it.

DO NOT DESTROY WORTH 10 DOLLARS. POSITIVELY VOID AFTER 30 DAYS.

TEXAS GUINAN Inc., Loose Bldg., Los Angeles, Calif

Fig. 3.—This "coupon" gives its recipient the privilege of buying thirty cents' worth of alum and alcohol for only ten dollars!

And whatever you do, do not confuse Texas Guinan's only original fat reducer with anything else you may have heard or dreamed of.

> "All the wafers, pills, powders, miracle dope, rubber jackets, rollers, weakening baths, and willy-nilly what nots, are a hilarious joke to you the moment you begin this treatment and behold with grateful, astonished eyes the marvelous, quick effects."

### LETTER NUMBER FIVE

In spite of all this, and much more; in spite of the fact that Texas inscribes herself "Your fond and faithful friend"; in spite of the promise of the "exuberant happiness" that would follow "the magic of this world-bewildering treatment"; in spite of everything, Letter No. 4 fell on deaf ears. Thus it became necessary for Texas to send Letter No. 5. This epistle lacked the fiery enthusiasm of the previous ones, whether because it was signed "Texas Guinan, per H. D. T., Manager," or because in this letter the price of the treatment is reduced to the ridiculously small sum of $3, it is hard to say. "This offer," you are told, "expires twenty days after you receive this letter." Moreover, "this is the last offer that will be made you; after that date the original price will be $20." To get it at this low price it is necessary to "send the names and addresses of ten fat men or women"; further, "it is understood that you will keep sacredly confidential the special $3 offer made you."

### THE CURE IS PURCHASED

Finally the money was sent and in due time a package came by express containing "Texas Guinan's World-Famed Treatment for Corpulency." This $20 treatment consisted of a quart bottle filled with a muddy liquid, which on standing separated into a pinkish sediment and an almost colorless liquid. The stuff was analyzed in the Association's laboratory, and as a result of the examination, the chemists' report might be summarized as follows:

To make a mixture having essentially the same composition as the "Texas Guinan World-Famed Treatment for Corpulency," take a quart-size fruit jar and put into it:

| | |
|---|---|
| Powdered Alum | 1 pound |
| Alcohol | 10 ounces |
| Water, sufficient to make | 1 quart |

The approximate cost of these materials is 30 cents; selling price, from $20 to $3, according to the ease with which one parts with his money. The chemists' report in detail follows:

### LABORATORY REPORT

"One original, sealed bottle (capacity about 1 quart, $20 size) of the "Texas Guinan World-Famed Treatment for Corpulency" (put up by the Texas Guinan Co., Los Angeles, Cal ) was received at the Association's laboratory and subjected to examination.

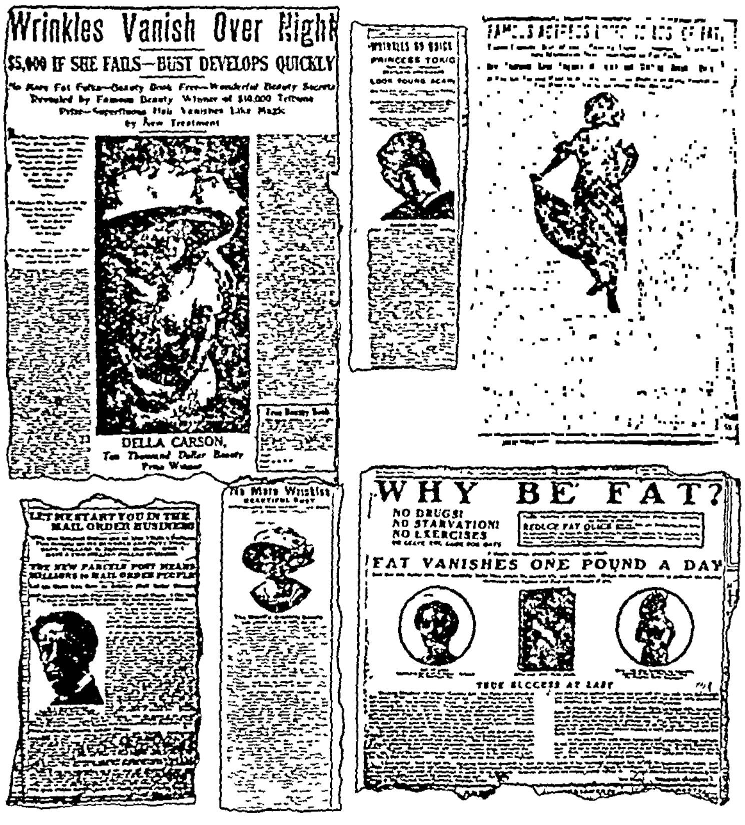

Wrinkles Vanish Over Night
$5,000 IF SHE FAILS—BUST DEVELOPS QUICKLY
No More Fat Folks—Beauty Book Free—Wonderful Beauty Secrets Revealed by Famous Beauty Winner of $10,000 Tribune Prize—Superfluous Hair Vanishes Like Magic by New Treatment
DELLA CARSON,
Ten Thousand Dollar Beauty Prize Winner
Free Beauty Book
PRINCESS TOKIO
LOOK YOUNG AGAIN
LET ME START YOU IN THE MAIL ORDER BUSINESS
THE NEW PARCELS POST MEANS MILLIONS to MAIL ORDER PEOPLE
No More Wrinkles
BEAUTIFUL BUST
WHY BE FAT?
NO DRUGS!
NO STARVATION!
NO EXERCISES
REDUCE FAT QUICK
FAT VANISHES ONE POUND A DAY
TRUE SUCCESS AT LAST

Fig. 4.—Photographic reproductions (greatly reduced) of advertisements of some of Cunningham's fraudulent mail-order schemes. In the upper row · The "Della Carson Wrinkle-Eradicator" on the left and "Texas Guinan Obesity Cure" on the right, with the "Princess Tokio Wrinkle-Eradicator" between. In the lower row "Cunningham's Mail-Order School" on *the left, the* "Marjorie Hamilton Obesity Cure" on the right, and "Evelyn Cunningham Bust-Developer" between.

"The bottle contained a heavy sediment (of light pink color) and an approximately equal volume of almost colorless supernatant liquid. On addition of water the sediment readily dissolved. The sample was highly scented with rose water. Qualitatively, the mixture gave tests for aluminum, potassium, sodium (traces of magnesium), iodid, sulphate, alcohol and water.

"The following quantitative data were obtained: 100 c.c. of the well-mixed preparation weighed 112 gm., equivalent to a specific gravity of 1.12; and 100 c.c. of the mixture contained about 60 c.c. of liquid and 51 gm. of solids.

"Some of the mixture was evaporated *to* dryness and the water of hydration removed by heating in an oven at 200 C. The aluminum and sulphate content of this dry powder was determined and found to agree closely with the theory for anhydrous aluminum potassium sulphate (alum), $AlK(SO_4)_2$. From the above examination the preparation appears to be composed essentially as follows:

| | |
|---|---|
| "Alum | 50.2 gm. |
| "Sodium Iodid | 00.16 gm. |
| "Alcohol (absolute) | 29.65 gm. |
| "Water (by difference) to make | 100 c.c." |

### NO ALCOHOL LABEL

In spite of the quantity of alcohol present in the mixture, there was no declaration of the presence of this substance, such as is required by the federal Food and Drugs Act.

The label containing the directions for the use of the stuff we reproduce photographically, omitting only a picture of Texas Guinan in tights, and a "special notice" to the effect that the preparation must positively be shaken before using.

Apparently, the world-famed treatment does not always have the same composition. A specimen of it was sent to us by a New York physician. No alcohol or alum was found in this, but instead a solution of gum, probably tragacanth. It seemed to be of the "vanishing lotion" type. Like the other specimen it had a minute quantity of iodid in it. Moreover, the label on the bottle forwarded to us from New York differed slightly from that on the bottle purchased by The Journal. The label on the non-alcoholic, gummy "cure" bore this statement:

> "By rubbing the fat parts with this liquid you will see that it rubs slowly into the pores; continue rubbing until it disappears and until the skin is apparently dry."

The label of the specimen obtained direct was modified thus:

> "By rubbing the fat parts with this liquid you will see that it quickly dries, leaving a powder upon the surface."

### AND THEN LETTER NUMBER SIX

One might imagine that after they have parted with $20 or $10 or $5 or $3, as the case may be, Texas would be willing to leave her victims in peace. But, no; a few days after the obesity cure has been received, Letter No. 6 arrives. It begins:

> "This is a letter of grave Warning—heed it, and you should have cause for eternal rejoicing—Disregard it, and you may bitterly Reproach Yourself For All Time To Come!"

The point is:

> "*The quantity of reducer sent you must by this time be getting scarce, and I write to warn you about Ordering A New Supply Before It Is Exhausted.*"

Miss Guinan is really quite concerned about the matter:

> "Not having heard from you with an order for a second supply, I have become a *little* worried, my *dear*, that you might make the *terrible* mistake of allowing the bottle to get empty without taking the precaution of having another one on hand. . . . You are now as one who has climbed three-fourths of the way up the *Pinnacle of Happiness—do not falter in your steps, do not hesitate, do not lag, do not doubt or fear.*"

While the "regular price is $20 a bottle to all the world," Texas is magnanimous again and will let her "dear" have repeat orders "for $4 a bottle, or two bottles for $7, or three bottles for $10." On no account must the "treatment" be interrupted; if continued "you will be magnificently reduced to normal proportions," provided—and this is a gem—"you use the treatment until the cause of your fat is overcome."

Then follows a number of testimonials—addresses omitted—leading up to this whirlwind climax:

> "The Golden Goal, The Sweet Reward Is In Sight; It Is All Up To You! It Is For You, And You Alone, To Choose! Success Or Failure? Which, My Dear? Yours with Affectionate Anxiety, Texas Guinan."

### SUMMARY

Those, then, who send $20—or less—for Texas Guinan's "cure" are to rub themselves with a watery-alcoholic solution of alum fifteen or twenty minutes at a time on rising, just before retiring and "as often during the day as desired." It is also suggested that a hot tub be taken twice a day and that white bread, potatoes, sweets and starchy food be omitted from the diet. That by taking hot baths repeatedly, rubbing oneself twenty minutes at a stretch at frequent intervals and dieting strictly, one might be able to reduce weight, is evidently true. That Texas Guinan's *mixture* of alum, alcohol and water has anything whatever to do with the reduction is, just as evidently, not true. In short, "Texas Guinan's World-Famed Cure for Corpulency" is essentially a fraud; as much of a fraud as the "Marjorie Hamilton Obesity Cure" that Cunningham exploited from Denver, or the bust developer and wrinkle eradicator that he sold in Chicago.

At the risk of appearing hypercritical, we reproduce two paragraphs from the order-blank used in purchasing the Texas Guinan "cure."

> "I also buy it with the understanding that it is new and different from any other treatment in the world that you ever heard of being advertised, and that there are no exercises of any kind with it, no dieting of any description, and that I may eat all kinds of foods I desire while taking it.
>
> "And I buy it with the still further understanding that worthless massage is unnecessary, and that in no part of your treatment is there any physical culture of any description, no internal bathing or enemas, no worthless, harmful creams to rub upon the skin or body, that there are no Turkish baths, no apparatus of any kind, no bandages, no belts, no garments, no body-wrecking sweat baths, no medicine, pills or internal stuff to swallow, no special foods and no obesity biscuits—nothing to take internally."

Possibly a mixture of alum, alcohol and water is "new and different from any other treatment in the world," for obesity. It cannot be said, though, that there are "no exercises of any kind," when the purchasers are explicitly instructed to rub themselves for fifteen or twenty minutes at a stretch. The statement that there is "no dieting of any description" and that the person using the nostrum "may eat all kinds of food," is also untrue, in the light of what appears on the label, which suggests a strict diet. A careful reading of the second paragraph given above will show that while many of the statements are technically true, they are essentially false.

It is a sorry commentary on our laws that a man whose business has been essentially one of fraud and deceit for years past, can continue to swindle the public with apparent impunity. The federal authorities took action in the case of Marjorie Hamilton, but as yet have not pushed the thing to completion. The Journal's thorough-going exposure of this particular swindle—and the publicity which the papers of the country gave The Journal article—killed it, financially. All that Cunningham needed to do, however, was to transfer his offices to another state and start up under another name. His stock in trade are impudence and mendacity; his clientele, the gullible. The federal machinery of necessity moves slowly, and it should be unnecessary to invoke federal aid in prosecuting a fraud of this kind. When Professor Samuels, the Wichita quack, attempted to operate his fraud-factory in Detroit, the local authorities took the thing in hand and made Michigan too hot for him. The local authorities of Los Angeles can do the same thing for Cunningham.

# Correspondence

## The Better Control of Ophthalmia Neonatorum

*To the Editor:*—In The Journal, Aug. 30, 1913, p. 634, Dr. A. Jacobi, the retiring president, states that "in 108 cases of ophthalmia neonatorum that are reported by various eye clinics, sixty-two patients were attended by physicians, forty-three by midwives, and three by neighbors . . . It so happened that all the cases of total blindness occurred in the practice of physicians." Yet we find that the punitive measures of the proposed bill are directed against the midwife most of all. Truly, there is plenty of material for the lawyer of sporting instinct, keen for employment in any possible claim against the opulent physician and the dividend-paying hospital association, but in the main it is the midwife that is to be regulated.

About six years ago I vainly tried to interest the health authorities of Cleveland in a consistent policy of saving the eyes of the newly-born. Instead, there followed an antimidwife crusade, resulting in jailing a baker's dozen of them—and nothing else. The mountains labored and brought forth a most ridiculous mouse.

Dr. Jacobi well insists on the training of midwives, sweeping aside the childish fears expressed in some quarters that the midwife might eventually compete with the physician. There is not a man in practice but knows that our immigrant citizens and too many others, employed at small wages, have not the means to employ a physician, let alone a nurse subsequent to accouchement; nor do they seem to conform to the American style of restricted families. It is this class of our citizenship which necessarily depends on the midwife. Our place is to bring about a system of training the midwife, not to jail her.

Whether or not the employment of a general practitioner as an accoucheur would eliminate ophthalmia neonatorum is a question that remains unanswered. My observation and experience do not incline me to an affirmative opinion. Abroad, especially in the rural districts, and in the city slums, where according to the tabulated returns of vital statistics, more than 75 per cent. of all confinements are assisted by midwives, not a single eye is lost from the disease. Here enters, too, a matter of professional difficulty—ethics, I had almost said. Take the busy physician, with a long calling-list. Attending, among others, a patient with scarlet fever, diphtheria or erysipelas, does he invariably take the time, granting the inclination, to bathe and to change his attire completely before calling on his next patient in what may perhaps be a confinement case? Is it not possible that contagion is carried in this way? It is well that we do not know! What we do know is that many a busy physician, impatient at the delays of natural childbirth, resorts to artificial aids; and again we should account ourselves fortunate in failing to know what damage accrues to the patient because of our "advanced" knowledge and dexterity.

Every reader knows that with all her antiquated ways Europe has but a tithe of women suffering from the diverse female troubles to which America is heir, and that our daily diet of laparotomies and exsected ovaries, by selfstyled "surgeons," is a rarity on the other side. This condition is almost entirely due to the employment of the midwife, educated and trained in her special work, supervised by competent practitioners, and, above all, grounded in the elementary instruction that on no account may she pass beyond the limits of her sphere, being specifically directed to call the physician at the first symptom of any abnormal condition. This course, while inuring to the immediate rectification of any trouble, automatically settles the fear of possible "competition."

What a splendid corps of midwives might be produced in America under proper conditions! Our women, intelligent, quick to learn and to observe, pliable to training and conscientious in their work, would make splendid material, while the prominence and responsibilities attaching to the work would raise it in the public opinion as one most desirable, yielding, at the same time, sufficient remuneration without imposing great burdens on the poorer among our citizenship. Such a step, it may well be believed, would settle the matter of lying-in homes and hospitals.

Finally, inasmuch as most of the victims of ophthalmia neonatorum come from the slums, and in view of the fact that the disease is the result of the ignorance of parents or prospective parents, I have long been convinced that appropriate instruction by way of public lectures and in other ways will almost wholly eliminate this crime against humanity.

There remains a word to be said about Section 4, Article 3, in the proposed bill, prepared under the auspices of the Council on Health and Public Instruction of the American Medical Association (The Journal, June 21, 1913, p. 2004), providing for the gratuitous distribution by the state board of health of a scientific prophylactic to physicians. There is no physician who would grudge the few pennies for investment in a bit of silver nitrate, while, on the other hand, the state should not be put to a considerable expense for purchases of medicine, packing and mailing. But that is an insignificant matter in comparison with the importance of the bill itself.

James Stotter, M.D., Cleveland.

## Convenient Rule for Dividing Doses

*To the Editor:*—I wish to submit a method which will save the doctor and nurse a good deal of time in administering drugs. If the physician wishes to divide a dose, such as a tablet containing a fraction of a certain weight (grain or gram) so as to give a smaller fraction, the following rule may prove convenient: Dissolve the larger dose in as many volumes of water (minims or cubic centimeters) as equal the denominator of the smaller fraction and give of this solution a number of volumes (minims or cubic centimeters) equal to the denominator of the larger fraction. Thus, if we have ⅛-grain tablets of morphin sulphate and wish to give 1/64 grain, we measure 64 minims of water, in which we dissolve the ⅛-grain tablet. Then by taking 8 minims for injection we give the required 1/64 grain.

MICHAEL S. AARONSON, M.D., New York.

# *Queries and Minor Notes*

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

## MARSDEN'S PASTE IN EPITHELIOMA

*To the Editor:*—1. Please give the formula of Marsden's Paste.

2. How often usually should it be applied to an epithelioma of ordinary size, one, for instance, as large as a small chestnut? How should it be applied, and how often, or do conditions of the neoplasm determine these points?

3. Why could I not use it on an epithelioma of the ala of the left nostril of an old man? This growth is about the size already mentioned and is getting larger. It is causing no discomfort. There are no metastases and the growth appears to be absolutely local. The patient cannot avail himself of opportunities which are not here, as radium, etc., and prefers to avoid the knife if possible.

FRANK P. NORMAN, M.D., Greenville, Ga.

ANSWER.—1. Marsden's paste consists of powdered acacia 1 part and arsenious acid 1 or 2 parts by weight, which are mixed at the time they are to be used with enough water to make a paste of the consistency of a firm ointment. If deep destruction of the tissue is necessary it is better to use the stronger mixture. If the lesion is relatively shallow in comparison with its area, the mixture of equal parts of arsenious acid and acacia is sufficient. In ulcerating lesions the stronger paste is preferable, because the eschar is formed more quickly and limits the absorption of arsenic.

2. The paste is applied in a thick layer over the area to be destroyed, and should extend beyond the apparent border of diseased tissue. It should be left in position until a white eschar is produced; this requires from eight to twenty-four hours. After the eschar forms, it should be dressed surgically. The slough will separate in from five to seven days, and if the treatment is properly carried out there remains a healthy granulating wound which heals in about a week and leaves a relatively small scar. After separation of the slough and healing of the wound, if any areas of epithelioma remain the treatment can be repeated as at first. Nodules of epithelioma that are covered by epidermis must be denuded by the curet or caustic potash or some similar agent before the application of an arsenic paste, for arsenic does not destroy horny epidermis.

3. If it is going to be used on an exuberant tumor on the ala nasi, such as described, the excess of epitheliomatous tissue should first be curetted away and the paste applied as above described to the base. It is probable that the layer of healthy tissue under the epithelioma is thin, if the tumor has not involved the entire thickness of the ala nasi, so that the ala nasi will probably be destroyed in the procedure.

In proper cases epitheliomas can be destroyed radically by such a paste, but it is not a method of preference in most cases and should be undertaken with caution.

## DELAFIELD'S HEMATOXYLIN—EHRLICH'S ACID HEMATOXYLIN

*To the Editor:*—Please give methods of preparation of Delafield's hematoxylin and Ehrlich's acid hematoxylin.

W. H. ENDERS, M.D., Jackson, Mich.

ANSWER.—The methods of preparation are as follows:

Delafield's Hematoxylin: To 400 c.c. of saturated solution of ammonia-alum (that is, about 1:11 of water) add 4 gm. of crystallized hematoxylin dissolved in 25 c.c. of strong alcohol. Leave it exposed to the light and air in an unstoppered bottle for three or four days. Filter, and add 100 c.c. of glycerin and 100 c.c. of methyl alcohol ($CH_4O$). Allow the solution to stand (uncorked) until the color is sufficiently dark, then filter.

Ehrlich's Acid Hematoxylin: Water 100 c.c., absolute alcohol 100, glycerin 100, glacial acetic acid 10, hematoxylin 2 gm., alum in excess. Let the mixture ripen in the light (with occasional admission of air) until it acquires a dark red color. It will then keep, with constant staining power, for years, if kept in a well-stoppered bottle. It is very appropriate for staining in bulk, as overstaining does not occur.

## LIABILITY FOR MEDICAL AND SURGICAL CARE OF PAUPERS IN ILLINOIS

*To the Editor:*—Can you give me information in regard to the Illinois laws on the medical and surgical care of paupers and near paupers? What are the duties of the township supervisors (overseers) in providing county help for sick paupers in the rural districts of Illinois where no regular county physician is appointed?

T. A. J., Illinois.

ANSWER.—Chapter 107 of the Illinois Revised Statutes, Paragraph 1732, provides that relatives of any pauper are first liable for his care, which would include necessary medical and surgical treatment. By relatives are meant children, parents, grandparents, cousins, uncles, aunts, etc., the nearer relatives being liable first. In case a township supervisory or overseer employed a physician to attend the pauper, the physician might present his bill to the overseer who would notify the court, and the relatives, if able, would be compelled to pay for such services. In case they were unable to pay, the physician's compensation would come from the township or county poor-funds.

## PRIVILEGED COMMUNICATIONS IN ILLINOIS

*To the Editor:*—I keep my account on one side of a sheet of paper and the case report on the other. I have seen a statement to the effect that accounts kept in this manner cannot be used in court in an attempt to collect, because of the fact that the record of the case would be considered a privileged communication. What is the status of this matter?

P. E. B., Illinois.

ANSWER.—There is no statute in Illinois covering the question of privileged communication between physician and patient. By the common law, the rule of privileged communications applies only between lawyer and client and such rule must be created by statute in all other relations. (See Wigmore on Evidence, Paragraph 2381, *et seq.*) In states having such a statute covering the relation of physician and patient, it might apply to an account of the character above defined, but it would depend on the interpretation of the court.

## EARLY DEMONSTRATION OF WASSERMANN REACTION

*To the Editor:*—1. How soon after the initial lesion of syphilis is a Wassermann demonstrable?

2. Is it true that a Wassermann is negative until after the secondary stage?

J. B. SPALDING, M.D., Kenosha, Wis.

ANSWER.—1. The reaction has been observed five days after the appearance of the initial lesion and can be elicited in a majority of cases after the lapse of fifteen days.

2. No.

## ELLIOT'S OPERATION FOR GLAUCOMA

*To the Editor:*—Please describe Elliot's operation for glaucoma.

J. T. LITTLE, M.D., Pittsburgh, Pa.

ANSWER.—Lieut.-Col. R. H. Elliot, of the (British) Indian Medical Service, Madras, a recent visitor to America, has revived (since 1909) and much improved a half-forgotten method of trephining the sclerocornea for the relief of increased tension in the various forms of glaucoma. Fergus reported the operation a little earlier than Elliot, but he has not had the wide experience of the Anglo-Indian, who has probably evolved a better procedure. Dr. Elliot has written a practical little work on the subject; in it he describes his operation which, in brief, is as follows: The operation may be performed under the local influence of cocain and epinephrin dropped into the sac.

The patient looks down, and a large triangular flap of conjunctiva is dissected up from above the cornea, the attached base of the triangle lying at the sclerocorneal margin. Experience has shown the importance of dissecting this flap right up to the limbal attachment of the conjunctiva. The flap is turned down on the cornea. The spot selected for the trephining should be in the cornea as much as possible, and should be prepared by using the scissor points freely, either cutting or scraping or both, right down to the scleral coat. It is important that no conjunctival tissue be left; otherwise it will catch in the trephine and tend to draw the flap into the latter as it is working. The operator should never pull on the flap, but simply steady the globe by pressing on the cornea through the down-turned flap. This is sufficient to keep the eye at rest and in the proper position. The trephine is used with quick, light movements, and care is taken that its first application suffices to bite into the sclera, before it is raised to see the progress made. Once a clean ring is thus started, it is easy to replace the trephine in it. As soon as the anterior chamber is tapped, aqueous fluid wells up alongside the trephine; even apart from this, there is a curious sucking sensation which tells one the trephine is through. Moreover, the patient often helps, by a slight movement due to the pain (seldom severe) which attends the completion of the section. The conjunctival flap is replaced *in situ* to see whether or not the iris is in position. If it is, and if there is no bulging of its base into the wound, the eye is at once closed. It sometimes happens that the iris bulges into the section the moment the disk is cut through; if so, it is snipped with scissors to let the aqueous fluid escape, and it then often goes back of itself. If it does not, then an iridectomy is performed. As a rule, a very small and peripheral section of the membrane suffices; more rarely it is necessary to make the iridectomy complete. It is well to instil physostigmin (eserin) drops into the eye after operation, if for any reason it is feared that a prolapse may take place. As a rule, no drops whatever are used immediately after the operation.

Elliot has somewhat modified his early operation by continuing the elevation of the tissues into the clear cornea—splitting the latter with a dull paracentesis needle or similar instrument—and he places emphasis on entering the trephine so that the corneal section shall be first made and a little hinge of tissue be formed toward the sclera. This hinge and the iris periphery may often be cut through by one snip of the scissors.

### CONTAGIOUSNESS OF SMALL-POX

*To the Editor:*—Please answer the following questions:

1. At what stage of the disease is small-pox most contagious, or is it contagious at all stages of the disease?
2. How contagious is the exfoliated material?
3. Is the expired breath contagious through all of the stages of the disease?

L. P. Barbour, M.D., Rocky Ford, Colo.

Answer.—1. Small-pox is contagious from the earliest active stage to the end of convalescence, and possibly even during the stage of incubation.

2. The exfoliated matter is very contagious and very tenacious of its infectivity. Its vitality is retained after the patient's death, and the room occupied by a patient, the bedding and articles of furniture all serve to convey the disease unless thoroughly disinfected.

3. Probably.

### EFFECT OF CUTTING THE VAS DEFERENS

*To the Editor:*—Please state whether or not cutting the vas deferens affects sexual desire.

J. A. Boyer, M.D., Carmi, Ill.

Answer.—The effects of cutting both vasa have been extensively observed in men as well as in animals. Observers are agreed that no perceptible change in sexual desire or power results therefrom. This conclusion accords with the familiar clinical observation that occlusion of both ducts through bilateral gonorrheal epididymitis does not in the least impair the subject's sexual desire or power. He does not even suspect any genital irregularity until search for the cause of the wife's failure to conceive reveals the absence of spermatozoa from the semen.

### SUBSCRIPTIONS FOR FOREIGN JOURNALS

*To the Editor:*—Please inform me if there is a place in America where one can subscribe for the *Wiener klinische Wochenschrift*, and also the price of the annual subscription.

J. Curtis Lyter, M.D., Moberly, Mo.

Answer.—The prices for subscriptions to all the exchanges listed in our Current Medical Literature Department were given in the Index Number of The Journal, June 28, 1913, p. 2097, and will be republished with the Index, December 27 next. The *Wiener klinische Wochenschrift* is there given as costing 24 marks a year. This is about $6, plus postage.

Advertisements of persons who make a specialty of taking subscriptions for foreign journals appear in nearly every issue of The Journal.

### COLLOIDAL PALLADIUM

*To the Editor:*—A physician here told me that he saw in The Journal a short time ago an article on the increasing of oxidation and the absorption of adipose tissue by the use of a *Colloidal Palladium* (he was not certain about the name of the metal used). Can you give me the number of The Journal containing the article described?

Lydia Allen DeVilbiss, M.D., Fort Wayne, Ind.

Answer.—Colloidal Palladium (Leptynol) was introduced by M. Kauffmann (München. med. Wchnschr., 1913, lx, 525, 1260), who states that it is related to the platinum group. The author performed experiments on himself and used the substance in other cases, he claims, with success. No other reports concerning this substance are available. It is apparently one of the many thousand proprietaries produced abroad in the past year and put on the market after meager experimental work.

### LITERATURE ON FIELD HOSPITALS

*To the Editor:*—Please refer me to literature giving plans for field and camp hospitals, and describing how they are conducted.

J. A. Rosenberger, M.D., Big Creek, Cal.

Answer—Following are references to recent articles on field hospitals:

Baketel, H. S.: Field Hospitals in Peace and War, *Mil. Surgeon*, November, 1913.
Reno, W. W.: Proposed Method of Pitching and Striking a Field Hospital rapidly, *Mil. Surgeon*, April, 1913.
Boaz, J. J.: Hospitals in the Field, *Mil. Surgeon*, November, 1910.
Lovering, P. A.: The Hospital Camp at Norfolk, Va., *U. S. Nav. Bull.*, October, 1909.

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# *Medical Economics*

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

## HEALTH DIRECTION IN THE PUBLIC SCHOOLS

C. P. McCord, Medical Inspector of Schools at Albany, N. Y., in a paper read before the Fourth International Congress on School Hygiene at Buffalo, says that we are living in the renaissance of science as applied to society. Interest in the growing child is manifested in laws concerning child-labor, infant-welfare work, school medical inspection and school nurses. Compulsory education has placed approximately twenty million children under a daily routine in the schools which is often far from being conducive to good health and normal development. Modern medical inspection in the schools dates back nineteen years, but its importance in our educational system is constantly increasing.

McCord believes that school medical inspection constitutes a specialty as much as laryngology or otology, but so far only two American medical colleges offer courses on social pediatrics in connection with instruction in the diseases *of children of* school age. In view of the great extension of school medical inspection there is a great need of well-trained physicians along this line. McCord believes that full-time men should be employed, preferably those having some experience as executives in school work, together with a first-class medical training with a knowledge of the elements of the specialties. They should have a fair outlook on pedagogic and sociologic problems, and should be paid adequate salaries. To afford the best results there should be a sufficient number of nurses to insure a daily visit to every school, which would mean one nurse to about fifteen hundred children. Adequate records should be kept. A good working reference library along medical, psychologic and sociologic lines should be provided.

McCord says that the medical officer should in no way usurp the privileges of the family physician. Much of the opposition to school inspection arises from the profession itself, and this is a greater drawback to effective work than is the opposition of parents to what they often believe to be an infringement on their rights as parents. It is the duty of the medical director always to refer cases to the family physician, who in necessary instances will refer them to a proper specialist. The opposition of the profession to a medical director in the schools arises from the fear that he will favor particular physicians or that he will treat or suggest treatment. The proper understanding of the aims of a well-equipped medical director will dispel this idea. The full-time man removes the danger that the inspector may "work" his position to increase his private practice.

When medical inspection is part of the educational system the question of the relation to the local board of health arises. Most cordial relations should, of course, exist, but it is chiefly the acute contagious diseases among schoolchildren which will fall under the authority of the board of health. In Albany, where McCord is director, the plan is that all such diseases are reported by telephone to the board of health, and in turn each morning the office of the medical inspector receives the report of all such cases known to the board of health.

McCord says that in view of the recent researches on measles and scarlet fever, the question arises as to whether or not the period of exclusion for these diseases might not be shortened materially. In the matter of diphtheria he believes that there should be a more rapid enforcement of the new rule requiring for release two negative cultures on two successive days. McCord's suggestion for lessening the spread of diphtheria would be to make cultures of every sore throat, and in instances in which a case of diphtheria develops to culture at once the throat of every child in the class and exclude the carriers.

The five chief highways to health in the public schools are medical inspection, school hygiene, personal hygiene, physical training and welfare work; and in the department of school inspection in Albany, as organized by McCord under the statute of New York making medical inspection of schools compulsory, the foundations have been laid for effectively carrying out these five requirements. The system was initiated in March, 1913. A laboratory has been established with facilities for complete medicopsychologic examination of backward children, and special classes have been provided for such children. An important feature of medical inspection is the work of the nurses. In Albany the city has been divided into districts with a nurse in every district. Every school receives a visit every other day. Acute or contagious diseases are first dealt with and the other children are thus protected. After these cases are attended to, routine examinations for physical defects are made and parents are notified, with the request that the child in question be taken to the family physician.

As to the practical results in Albany, since April, 1913, forty-eight operations have been performed by Albany physicians for the correction of physical defects. Over 50 dental treatments have been secured, 150 children have been provided with eye-glasses and hundreds of children with contagious and parasitic diseases have been excluded until cured. The inspections have shown defective vision in 20 per cent., enlarged tonsils in from 6 to 12 per cent., nasal obstructions in from 12 to 20 per cent., decayed teeth in from 50 to 80 per cent., nervous disorders in from 5 to 20 per cent., orthopedic defects in 20 per cent., skin diseases in from 1 to 15 per cent., mental defects in from 1 to 2 per cent., and defective hearing in from 2 to 5 per cent. One great object of the medical inspection is to place the responsibility with the parent for obtaining advice from the family physician. An interesting feature of the Albany plan is the blank for recording the medicopsychologic laboratory examination, which includes the history, examination, and sociologic, psychologic and educational data.

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## THE PUBLIC HEALTH SITUATION IN ATLANTA

Atlanta, Ga., is a progressive and rapidly growing city of 175,000 inhabitants. The public-spirited citizens composing the Chamber of Commerce of Atlanta, recognizing that the health of a city is its greatest asset and one of the requisites for attracting people and industries, made provisions for a survey of the public-health situation. This survey was conducted by the Department of Surveys and Exhibits of the Russell Sage Foundation, which has recently made its report. This report in many of its features, in which health conditions in Atlanta are criticized, would undoubtedly apply to most of our cities. It is therefore not to be considered purely as a criticism or condemnation of conditions in Atlanta, but rather as a valuable guide to the improvement of health conditions generally. That, of course, was the end sought by the citizens in obtaining this survey.

One of the first features of the report is that of preventable diseases, from which it is shown that 15.6 per cent. of the whole mortality (about 3,000) of the city in 1910 was due to eight well-known infectious diseases which are generally admitted to be preventable. Adding four other diseases, diarrhea, meningitis, pneumonia and puerperal fever, which are probably preventable under ideal conditions, the total deaths (1,042) from preventable diseases was 35.5 per cent. of the total mortality.

Inasmuch as the prevention of such diseases is one of the chief functions of the health organization, the report discusses the present organization of the health board of Atlanta. The board of health consists of ten members. This board directs the work of two separate organizations, the division of sanitary inspection, which is occupied with the collection and disposal of garbage, cleaning of streets and the engineering aspects of health work, and the department proper, which is in charge of a health officer hired and directed by the board. The board maintains a laboratory, a detention hospital for contagious diseases and a tuberculosis sanatorium, and is engaged in the registration of vital diseases, the control of communicable diseases, milk and dairy inspection, meat and market inspection, mosquito reduction, plumbing inspection and medical relief to the poor. The appropriation for carrying on this work is $80,000 yearly, which is less than 23 cents per inhabitant per year, which the report regards as considerably below the minimum requirement for a modern effective department. This is the great criticism which applies to practically all municipal health departments at present.

The system of reporting vital statistics is criticized not because it is inadequate, but because of lax enforcement. It is said that births must be reported promptly if any baby-saving work is to be attempted, and that deaths should be reported not only promptly but with accurate and adequate information. Examination of 349 death certificates filed during May, 1913, showed the statement of cause to be satisfactory in only 181. The remaining 168, or 48 per cent., were found to be incorrect, incomplete or indefinite, which, as the report says, is not only in violation of the law, but is a testimonial of ignorance and carelessness which is a serious reproach to the local medical profession. This comment again would apply to almost any other city.

Criticism is made that measles, whooping-cough, erysipelas, chicken-pox, typhus fever and pellagra, which were formerly reportable, were dropped in 1911 from the list of reportable diseases at the suggestion of the Fulton County Medical Society. Diphtheria, scarlet fever, small-pox and cerebrospinal meningitis are reported satisfactorily, but typhoid fever and tuberculosis are said to be reported in only about half of the cases. Only a few of the typhoid patients are visited and no steps are taken to follow up tuberculosis. Diphtheria patients are released ten days after the disappearance of the clinical symptoms, and attention is called to the fact that it is a better practice to release only after two successive negative cultures. Laboratory diagnosis in tuberculosis and diphtheria is offered by the department, but the work is hampered by the lack of funds, and it is said that the city neglects a definite opportunity to purchase public health.

Milk and dairy inspection is likewise provided for in a comprehensive ordinance covering inspection of dairy farms, depots, etc., and prescribing milk standards and proper temperature and bacteriologic standards; but only two dairy inspectors, one bacteriologist and an assistant are provided, which is an entirely inadequate force for the work to be done.

Meat and market inspection is commented on in the report, although no provisions are made for the chemical detection of adulterations of food.

Mosquito reduction is fairly well provided for, but the health officer believes that a larger sum of money could be profitably spent.

The criticism is made that nearly one-sixth of the department's appropriation is spent on plumbing inspection, which is a matter now considered to have slight hygienic significance, and it is said to be unfortunate that twice as much is spent on this department as for the control of communicable diseases.

In referring to the defects in the present organization of the board, it is said that the board's system of health-department control is a relic of the days in which health work was largely a matter of nuisance abatement and emergency steps in the face of epidemics of small-pox, etc. Public-health work has become technical and it is now considered wiser to hire a competent specialist in public-health work. The problems of disease and statistics are beyond the field of experience of the members of the board.

It is also pointed out that the sanitary division carries on certain work which properly belongs to the health department, such as the supervision of privies and dry closets, which is work of distinct hygienic importance, as is that of the inspection of private wells, a service now entirely omitted.

Among the "neglected opportunities" considered in the report is that of lessening the death-rate among infants under 1 year of age, of which there were 521 in Atlanta in 1910. In other cities this problem has been attacked by requiring proper reporting of births and the visiting of cases by health department nurses. Midwives are examined and regulated, and infant-welfare stations are established in congested districts which supply pure milk and cheap ice. Atlanta has not taken any of the above-mentioned steps, but a number of private organizations have been carrying on this work on a limited scale.

The restriction of tuberculosis, it is stated, offers another of the largest opoprtunities for health improvement. In Atlanta, many of the elements of a well-rounded program for the improvement of conditions with regard to tuberculosis are present, but they need to be brought together and augmented. The health department receives reports of cases (though only partially complete) and maintains a sanatorium, and the antituberculosis society maintains a clinic, investigates cases and furnishes certain nursing facilities. The cooperation between these two organizations is not close enough.

One of the chief opportunities for betterment recommended in the report is that of dispensary service for the benefit of the poor, among whom much sickness occurs, a greater portion of which is of the communicable and preventable variety. These patients, if not treated, serve as reservoirs, or incubators of infection, and purely as a matter of economy, if nothing else, should be found and cured. The most effective way in which this can be done, it is stated, is through a free health department dispensary which becomes a recognized center not only for medical treatment but also for the dissemination of all kinds of sanitary knowledge.

A good housing law is recommended as being especially desirable for Atlanta with its large colored population and congested living conditions, which make the spread of infectious diseases easy. It would produce a great improvement also in the houses of the better classes, eliminating dark rooms and insuring proper sanitary arrangements, etc.

The report says of the negro, who constitutes a larger proportion of the population than in many Northern cities, that he may be regarded as a hygienic liability, but at the same time represents a hygienic opportunity because he represents an opportunity to reduce greatly the community's stock of infectious diseases. At present in Atlanta practically no attention is paid to infectious diseases among the negroes, and no isolation hospitals are open to them.

The recommendations and conclusions of the report embody the correction of the conditions criticized above and as far as posible a reorganization of the health department, centering greater authority and responsibility in a competent health officer, and above all, providing adequate appropriations for carrying out the well-known problems of city hygiene and sanitation.

As of course is to be expected, Atlanta presents special problems, which the survey has revealed, but, as we have stated, in the main the criticisms of almost every condition mentioned will apply to practically every city in the land. The fact that a survey has been demanded by the citizens of Atlanta is the best assurance that progress is bound to be made along these lines.

# *Medical Education and State Boards of Registration*

## COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

ILLINOIS: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

INDIANA: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.

IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KENTUCKY: Armory, Louisville, Dec. 11-13. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: Homeo., St. Luke's Hospital, Baltimore, Dec. 15-16. Sec., Dr. O. N. Duval, 1817 N. Fulton Ave., Baltimore.

MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

NEW MEXICO: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

SOUTH DAKOTA: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

VERMONT: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, Dec. 16-19. Sec., Dr. Herbert Old, Norfolk.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

WISCONSIN: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

## Louisiana October Report

Dr. A. B. Brown, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Oct. 27-29, 1913. The number of subjects examined in was 10, the total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 27, of whom 16 passed and 11 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Birmingham Medical College | (1913) | 85.2 |
| University of Alabama | (1913) | 82.9 |
| Chicago College of Medicine and Surgery | (1913) | 83.7 |
| Illinois Medical College | (1910) | 79.6 |
| Tulane University, (1897) 77.1; (1910) 84; (1913) 78.7; 82.4; 87.6; 89.7; 90.1; 90.8. | | |
| Jefferson Medical College, Philadelphia | (1913) | 82.6 |
| Memphis Hospital Medical College | (1913) | 79.8 |
| University of Tennessee | (1913) | 77.4 |
| Fort Worth School of Medicine | (1911) | 86.4 |

FAILED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Atlanta College of Physicians and Surgeons | (1913) | 68.6 |
| Flint Medical College | (1910) | 61.1 |
| Meharry Medical College | (1912) | 68 |
| Memphis Hospital Medical College, (1901) 60.7; (1911) 65.4; (1912) 65.7; 73; (1913) 51.5. | | |
| University of Tennessee, (1913) 59.9; 71.6; 72.5. | | |

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| University of Illinois | (1912) | Illinois |
| University of Louisville | (1912) | Kentucky |
| Baltimore Medical College | (1912) | Maryland |
| University of Michigan | (1912) | Michigan |

One candidate, a graduate of the Hahnemann Medical College, Chicago, in 1906, was licensed through reciprocity with Illinois by the Homeopathic State Board of Medical Examiners of Louisiana, November 3, 1913.

The following questions were asked:

PATHOLOGY

1. (a) What is an infarct? (b) What is an anemic infarct? (c) What is a hemorrhagic infarct? 2. Describe the process of healing wounds by first intention. 3. Name the different forms of pus-producing cocci, and state which of these are the most virulent. 4. (a) What is suppuration? (b) What is leukocytosis? 5. What changes occur in joints following gonorrheal metastasis? 6. Describe the pathology of acute osteomyelitis. 7. What are the pathological changes found in the small intestine in typhoid fever? 8. Describe the gross pathology of acute lobar pneumonia. 9. Describe the

pathology of pyonephrosis. 10. Describe the pathology of arteriosclerosis.

### ANATOMY

1. Name boundaries, anterior and posterior of axilla. 2. Describe the thoracic duct. 3. Give origin and structures supplied by the glossopharyngeal nerve. 4. Describe the Y or iliofemoral ligament. 5. What is connective tissue? Where is it found? 6. Name ligaments of ankle joint. 7. Describe the pleura. 8. Describe the arteries and veins passing to and from the kidney. 9. Give component parts of spermatic cord. 10. Describe the relations of the peritoneum to the bladder.

### PHYSIOLOGY

1. What is invertin, and what part does it play in digestion? 2. What is an internal secretion; name the more important organs concerned in the process of internal secretion. 3. What are the principal waste products of metabolism and through what channels are they excreted? 4. What are the average proportions of the principal constituents of normal human milk? 5. What kind of nerve impulses are carried through efferent and afferent nerve fibers? 6. What is the result of injury to, or removal of, the semicircular canals? 7. Name the nerves concerned in the constriction and in the dilatation of the pupil of the eye. 8. State briefly what is understood by diapedesis and phagocytosis. 9. What factors are concerned in the second sound of the heart and where is this sound best heard? 10. Relative to external respiration, state briefly what is understood by (a) tital air, (b) complemental air, (c) reserve air, (d) residual air.

### CHEMISTRY

1. What are the principal allotropic forms of carbon? 2. How does carbon dioxide act as a poison? 3. What is an unorganized or soluble ferment? 4. Name the soluble ferments of the body. 5. What are the tests for starch? 6. What caution should be observed in testing urine for sugar? 7. What are ptomaines, and name some of the best known ptomaines? 8. What is the principal salt of silver used in medicine, and what are the properties of this salt? 9. What are fats, and name the principal animal fats. 10. (a) Is elementary arsenic poisonous. (b) how does arsenic prove poisonous, (c) which is the most common poisonous compound of arsenic?

### THERAPEUTICS

1. (a) What are mydriatics? (b) Name them. 2. Name the principal drugs used for the reduction of blood-pressure. 3. (a) What are cardiac stimulants. (b) Name some of the best known drugs used for this purpose. 4. Describe the physiologic action of the diuretics. 5. How would you treat a case of acute opium poisoning? 6. What are the antidotes for arsenic? 7. Describe the treatment of valvular disease of the heart with failing compensation. 8. How do substances act by counter-irritation? Name some of the best known counter-irritants. 9. Describe the action of antidiphtheric serum in a case of diphtheria. 10. What are the physiologic actions of the salts of cinchona?

### PHYSICAL DIAGNOSIS

1. What are the types of normal respiration, and what conditions would cause alterations of same. 2. What conditions influence the production and variation of pitch? 3. Define dyspnea, and state the types and causes of same. 4. Summarize the points of differentiation between pleuritic friction sounds and bronchitis. 5. Describe the natural heart sounds, and the causes of each. 6. Describe the characteristics and significance of the various kinds of arterial pulse. 7. What are the physical signs of pericarditis with effusion. 8. Differentiate cardiac hypertrophy and cardiac dilatation. 9. Give the physical signs of combined aortic and mitral insufficiency. 10. Describe the physical signs of ascites and those of cystic disease of the ovary.

### SURGERY

1. Give treatment of a compound fracture of humerus. 2. Give symptoms and treatment of tubercular hip joint. 3. What operative measures may be indicated in exophthalmic goiter? 4. Differentiate between enlarged inguinal glands, hernia and hydrocele. 5. Give diagnosis and treatment of epithelioma of lower lip. 6. Give symptoms of acute osteomyelitis. 7. Describe the operation of posterior gastro-enterostomy. For what condition is it most frequently performed. 8. Give symptoms, diagnosis and treatment of tubercular kidney. 9. Give signs, symptoms and treatment of depressed fracture of skull. 10. Describe Colles' fracture. How is it generally produced and how should it be treated.

### OBSTETRICS

1. (a) What are the causes of prolonged first stage of labor; (b) dangers; (c) management? 2. Discuss in general the principal drugs used to hasten labor. 3. What are the prerequisites, indications and contraindications for the use of forceps. 4. What are the causes of hemorrhage before and after delivery? 5. (a) What conditions necessitate version; (b) forceps delivery; (c) Cesarean section? 6. Describe a cesarean section. 7. Vaginal examination shows the saggital suture occupying the right oblique diameter; the small fontanelle is felt opposite the right sacro-illiac synchondrosis, the large fontanelle being directed toward the left and front. (a) What is the position of the child; (b) how may the case end; (c) treat the case if nature's efforts are unsuccessful. 8. What changes occur in the fetal circulation at birth. 9. Give the etiology and treatment of subinvolution of the uterus. 10. What is the cause and treatment of frequent urination in pregnant women?

### GYNECOLOGY

1. Name the different malignant neoplasms of the ovary. 2. (a) What symptoms and signs would lead you to suspect carcinoma of the body of the uterus? (b) Why is carcinoma of the body of the uterus less malignant than carcinoma of the cervix? 3. Name the muscles of the female perineum which may be torn during labor. 4. Describe the pathology of cystocele and of rectocele. 5. Name the causes of dysmenorrhea. 6. Differentiate between incomplete abortion and extra-uterine pregnancy. 7. Name the different varieties of uterine fibroids. 8. What general and local conditions may cause amenorrhea? 9. Describe the operative treatment for prolapse of the uterus. 10. What symptoms may follow retroversion of the uterus?

### HYGIENE

1. How does the expired air from persons differ in its composition from ordinary air? 2. Name at least six bacterial diseases in which the respiratory tract is the portal of entrance for the microorganism. 3. What are the advantages of pasteurized milk? 4. What is the specific gravity of normal cows' milk, and to what is it due? 5. What is understood by active and passive artificial immunity? 6. What is the value of temperatures and sunlight as physical disinfectants? 7. What is understood by an intermediary host in the transmission of infection, and give examples of diseases transmitted in this manner. 8. What measures must be instituted in the prevention of bubonic plague? 9. What is a diphtheria carrier, and what precautions should be observed with regard to the carrier and the community? 10. Which is preferable, the combined system of sewerage and drainage, or the separate system, and why?

## Nevada November Report

Dr. Simion L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written and practical examination held at Carson City, Nov. 3-5, 1913. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 10, of whom 7 passed and 3 failed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| California Eclectic Medical College | (1913) | 90.9 |
| Hahnemann Medical College of the Pacific | (1905) | 84.9 |
| New York Homeopathic Med. Coll. and Hospital | (1908) | 80 |
| [illegible] lo | (1893) | 75 |
| [illegible] llege, Cincinnati | (1913) | 87.8 |
| [illegible] College | (1911) | 81.8 |
| University of Toronto | (1899) | 94.6 |

FAILED

| College | Year Grad. | Per Cent. |
|---|---|---|
| California Eclectic Medical College | (1903) | 57.8 |
| Hospital College of Medicine, Louisville | (1898) | 57.4 |
| Kentucky School of Medicine of Louisville | (1906) | 63.2 |

LICENSED THROUGH RECIPROCITY

| College | Year Grad. | Reciprocity with |
|---|---|---|
| University of Georgia | (1899) | Georgia |
| Bennett College of Eclectic Med. and Surg. | (1886) | S. Dakota |
| Hahnemann Med. College and Hospital, Chicago | (1895) | S. Dakota |
| Chicago Medical College | (1879) | Illinois |
| Rush Medical College ......(1902) S. Dakota, | (1912) | Minnesota |
| Physico-Medical College of Indiana | (1889) | Indiana |
| Baltimore Medical College | (1903) | Illinois |
| College of Physicians and Surgeons, Baltimore | (1912) | Utah |
| Maryland Medical College | (1911) | S. Dakota |
| University of Minnesota, Homeopathic Dept. | (1907) | Minnesota |
| University of Nebraska | (1902) | Nebraska |

# Book Notices

GONORRHEA IN WOMEN. Its Pathology, Symptomatology, Diagnosis and Treatment; Together with a Review of the Rare Varieties of the Disease Which Occur in Men, Women and Children. By Charles C. Norris, M.D., Instructor in Gynecology, University of Pennsylvania. With an introduction by John G. Clark, M.D., Professor of Gynecology, University of Pennsylvania. Cloth. Price, $6 net. Pp. 521, with 40 illustrations. Philadelphia: W. B. Saunders Company, 1913.

This is the most important treatise on the subject of gonorrhea thus far prepared in the English language. The work is most elaborate in its wealth of detail and is far more than a mere monograph. While dealing chiefly with the Neisserian infection in women the scope is necessarily broader. Thus in the chapter devoted to prophylaxis, the various methods employed to prevent infection in men is set forth at length.

After an interesting and comprehensive historical account the bacteriology of the gonococcus and the pathologic changes produced in the female genital tract are described. There is an unusually full description of the pus-tube, with several excellent illustrations. Chapters on sociology and prostitution are properly placed side by side and again indicate the breadth of the author's point of view. His statistical reports are most interesting. It is stated that of half a million prostitutes in our great cities, 40,000 die annually, 30 per cent., as a result of gonorrhea Approximately 60 per cent. of all gynecologic operations are performed for gonorrhea or its results. These chapters contain numerous and elaborate statistical tables. As a result of his exhaustive study of the subject of prostitution Norris advocates legal regulation, though recognizing the difficulty of securing efficiency. He is a strong advocate of instruction in sex hygiene for boys and girls of high-school age, believing that regulation is of minor importance as compared with educational methods in the ultimate solution of this difficult problem. Norris takes an advanced position again in his advocacy of an obligatory certificate of health for the male before marriage, and of a ruling making venereal diseases notifiable to the board of health. Indeed, he goes further and would make it a punishable offense to communicate a venereal disease.

In tracing the pathologic changes incident to this infection a topographic sequence has been adopted, beginning with the external genitalia and following the process through the vagina, uterus and appendages into the pelvis. The unusual manifestations and the remote complications are discussed in order as well as the relations of gonorrhea to pregnancy, labor and the puerperium. Gonorrhea in the extremes of life and its extragenital manifestations are clearly discussed. The operative methods of treatment are described comprehensively, emphasis being placed, however, on the importance of conservative medical treatment before surgical intervention is undertaken. In his operative procedures the author is a stanch advocate of conservative work, especially in the young woman. The cure by surgery of chronic gonorrheal processes involving the internal genitalia is essentially a mutilation, and whenever possible the function of menstruation should be preserved, as well as that of reproduction. The medicinal treatment of gonorrhea is exhaustively considered in the final chapter. The author's summary of what he considers the proper therapeutic care of the patient is of chief interest here. Foot-notes provide a vast amount of material for consultation. Far more than a text merely for perusal by the specialist or general practitioner, this volume in its breadth and comprehensive scope, as Dr. Clark well says in the introduction, may be accepted by the legislator and the sociologist as a fundamental treatise.

The Difficulties and Emergencies of Obstetric Practice. By Comyns Berkeley. M.A., M.D., B.C., Obstetric and Gynecologic Surgeon to the Middlesex Hospital, and Victor Bonney, M.S., M.D., B.Sc., Assistant and Gynecologic Surgeon to the Middlesex Hospital. Cloth. Price, $7.50. Pp. 787, with 287 illustrations. Philadelphia: P. Blakiston's Son & Co.

The object of this work, as frankly set forth by its authors, is to afford practical guidance to the practitioner when he is called on to deal with the difficulties and emergencies that attend obstetric practice. The more fundamental topics, such as the physiology and the management of normal pregnancy, labor and the puerperium, are omitted, so that the volume has rather the appearance of an operative obstetrics, differing only in that its field is broader, since it takes in all the pathology of labor, even the non-surgical complications. Thus a number of the early chapters are given over to complications of labor, such as disorders of the intestinal and urinary tracts, the gall-bladder, peritoneum and spleen, the nervous system, respiratory tract, and the heart and blood. In appendicitis the author favors operation on diagnosis. Again, in gall-stones operative interference is advised except during the last two months of pregnancy. On the other hand, in pyelonephritis conservative measures are to be adopted, operation being the rule only when the disease is bilateral. After termination, if the condition remains unimproved for one week, nephrotomy or nephrectomy will probably be indicated. Operation for hyperthyroidism should never be performed without first concluding the pregnancy. In valvular heart lesions, doubt is expressed as to whether the inevitable heart failure appears sooner in the majority of women who have borne children than in those who have remained sterile. Nevertheless, if compensation fails before the sixth month, pregnancy must be terminated, and in labor the second stage is always to be shortened artificially. Induction of abortion or premature labor in pulmonary tuberculosis is to be reserved for special cases, and the mother on no account is to nurse the baby.

In like manner the authors have advanced the more recent ideas in respect to the management of abdominopelvic tumors in connection with child-bearing and of uterine displacements with gestation. When there is evidence of retained fetal products in septic abortion, the uterus is to be cleaned out at the earliest opportunity. The tampon is the most preferred method in the treatment of accidental hemorrhage. Version and the rubber bag are favored in placenta praevia. Cesarean section is reserved for only the most favorable cases, and those in which the implantation over the cervical canal is complete.

Labor complicated by anomalies of the forces, of the genital passages and of the pelvis, and by malpresentation of the child, or by abnormalities of the child and umbilical cord, and labor complicated by rupture of the genital canal comprise a series of interesting chapters as conditions which invariably lead to operative interference. Fever in the puerperium is considered at length and from all its various aspects. Separate chapters are devoted to such topics as the breast, ectopic gestation, and anesthesia and analgesia during the labor. Obstetric operations are gone into in every detail and are profusely illustrated. Aside from a few minor technical differences, such as delivery with forceps in the lateral position, these procedures are identical in performance with those familiar in American practice. A long chapter on diseases and injuries of the new-born and a briefer one devoted to infant feeding conclude the volume.

At no time have the authors striven for brevity. The material fills a large volume and yet conciseness is evident on every page. Throughout, their views are well formulated, either in parallel columns or in one, two, three order. This, indeed, is the feature of the work. As an example, the conditions and indications for forceps extraction may be cited, or the treatment of eclampsia. Thus, while detail is abundant, verbosity is absent, and the volume gives rather the impression of completeness and extreme care in preparation.

An Elementary Study of the Brain. Based on Dissection of the Brain of Sheep. By Eben W. Fiske, A.M., M.D. Cloth. Price, $1.25 net. Pp. 133, with 19 illustrations. New York: Macmillan Company. 1913.

The preparation of an elementary text-book of neurology for premedical and other college students who have neither the biologic training nor the time for the mastery of the larger manuals adapted for advanced medical students is a peculiarly difficult task. The subject is intrinsically complex and difficult, and it is rendered still more so by a confused and cumbersome terminology and often by the failure of writers and teachers to clothe the anatomic detail with functional or any other meaning. Much of that which goes under the name of neurology in our schools is a meaningless jargon of no present or future value to the student. There is a real demand for a brief and very elementary introduction to the nervous system adapted for college students in zoology, physiology and psychology, and several small books of this character have recently been published, none of which, however, is very satisfactory. Beginning students in this subject are usually at first lost in the bewildering complexity of meaningless anatomic detail, and fortunate indeed are those who find their way through these mazes to a point at which they can see the plan of the whole structure. This can be facilitated only by limiting the content of such an introduction to the most important fundamental facts and by presenting no anatomic details whose functional significance is not at once made clear. The choice of these details and the plan of presentation, moreover, must be made by a master of the entire field with a true sense of proportion of part with part and with a unifying motive always kept in mind. The laboratory student is apt to perform his manipulations, faithfully following the directions, but without giving thought to the meaning of the exercise until it is finished—if even then. A beautifully finished dissection made in this spirit has little more pedagogic value to the student than the exercise of carving an effigy on a pipe bowl. The teacher's problem is to induce the student to keep his mind intent on the meaning of the work with which his hands are engaged, and it must be admitted that he derives but little aid in this from most of our manuals of dissection.

Dr. Fiske's little book is in some respects admirably planned. It presents an account of the gross anatomy of the brain of the sheep, with laboratory directions for its study, together with discussions of phylogeny, embryology and functions. These matters are not very well coordinated, however, and the student will probably fail to carry away any but hazy notions of the actual working of the nervous system from the work as a whole. The physiologic and other explanatory data appended to the anatomic sections are not always happily phrased, and the work is far from presenting (even when all dissections are made as directed) a clear picture of the brain as a functioning organ. The descriptive part, moreover, is marred by many erroneous statements. The chapters are illustrated by photographs of lower vertebrate brains taken from the Ziegler models, by a few simple sketches of embryologic stages of the human brain, and by a series of photographs of surface views, dissections and cross-sections of the brain of the sheep. The latter are worthy of the highest praise and, with the accompanying simple key drawings, will prove very useful.

PRACTICAL BACTERIOLOGY, MICROBIOLOGY AND SERUM THERAPY (MEDICAL AND VETERINARY). Text-Book for Laboratory Use. By Dr. A. Besson. Translated and Adapted from Fifth French Edition by H. J. Hutchins, D.S.O., M.A., M.R.C.S., Heath Professor of Comparative Pathology and Bacteriology of University of Durham. Cloth. Price, $10.50 net. Pp. 892, with 416 illustrations. New York: Longmans, Green & Co., 1913.

This work has been designed purely as a laboratory guide, the one object constantly in view in its preparation having been to make it a book which would both direct the beginner step by step and, at the same time, afford to the more skilled worker such assistance as would enable him to pursue his researches in a profitable direction. It is one of the most complete and satisfactory laboratory guides to microbiology with which we are acquainted. The value to all types of students is much enhanced by the avoidance of purely theoretical discussions. The subject-matter is arranged in seven parts as follows: general technic, the pathogenic bacteria, the parasitic fungi, the pathogenic spirochetes, the protozoan parasites, the filterable viruses, and the application of bacteriologic methods to the examination of water, sewage and air. Each of these sections is subdivided into many groups, so that the mass of information given is enormous. Each bacterial species is minutely discussed, the morphology, biologic properties, detection and isolation of the organism and the technic and results of animal inoculation being carefully and fully outlined. The illustrations, both plain and colored, are excellent.

MASSAGE. Manual Treatment, Remedial Movements. History, Mode of Application and Effects; Indications and Contra-Indications. By Douglas Graham, M.D. With Chapter on Massage of the Eye, by Dr. A. Darier. Fourth Edition. Cloth. Price, $5 net. Pp. 574, with 75 illustrations. Philadelphia: J. B. Lippincott Company, 1913.

This is a comprehensive, scientific work of a man who has devoted his life to the subject, and who has his own ideas and knows how to express them. His knowledge of French, German and Italian has enabled him to review a great deal of the literature on massage. What particularly makes the book readable is the fact that Graham always has an eye open for the humorous, and the fact that his humor sometimes is turned into sharp satire does not make it less easy to read. Particularly good are the sections on the history of massage, on the mode of operation and on traumatic joint affections.

HANDBOOK OF PHYSIOLOGY. By W. D. Halliburton, M.D., LL.D., F.R.C.P., Professor of Physiology, King's College, London. Eleventh Edition (Being the Twenty-Fourth Edition of Kirkes' Physiology). Cloth. Price, $3 net. Pp. 923, with nearly 600 illustrations. Philadelphia: P. Blakiston's Son & Co., 1913.

The present edition of this hand-book differs from the preceding one because several chapters have been rewritten and the others revised. The last two chapters of the previous edition are replaced by a new one on reproduction, development, growth and death. Heredity and eugenics are also briefly discussed. The work of revision, together with the introduction of considerable new matter, has been conducted in such a manner that the size of the book instead of being increased is actually less by a page than the previous edition.

# *Medicolegal*

## Defective Prosecution on Quarantine Order—Powers Under Statutes to Protect Public Health—Judicial Notice of Scarlatina

*(State vs. Rackowski (Conn.), 86 Atl. R. 606)*

The Supreme Court of Errors of Connecticut reverses for error a judgment of conviction, and orders a new trial for the defendant, who was charged with having violated an order of the health officer of the borough of Naugatuck quarantining her and her two minor children as persons whom the health officer had reasonable grounds for believing to be infected with scarlatina or scarlet fever.

The court says that the information assumed to charge the crime provided for by Section 2552 of the General Statutes of Connecticut, for a violation of an order of the health officer made under Section 2549, reading "Any town, city, or borough health officer or the board of health of a city or borough, may order any person whom they have reasonable grounds to believe to be infected with any malignant, infectious or contagious disease, into confinement in a place to be designated by them, there to remain so long as said health officer or board shall judge necessary." Before a lawful order can be made under this statute, the health officer must have a reasonable belief that the person or persons ordered into confinement are infected with a contagious disease.

The proof failed to meet the charge inasmuch as the information charged a violation of an order quarantining the accused because the health officer had reasonable grounds to believe that she was infected with a contagious disease, whereas the record did not show that the accused was either infected with that disease or that the health officer had reasonable grounds to believe she was so infected. There was therefore no basis for the charge that, if the jury found that the accused herself broke the quarantine by going abroad, it was their duty to find her guilty.

The state pointed out, with emphasis, the danger to the community if one having been exposed to a contagious disease might not be quarantined by the health authorities. Lest such a want of power may be inferred from this decision, the court points out the source of power of the health officer to prevent the spread of contagious diseases by an order quarantining those who may have been exposed.

This information did not charge the accused with violation of an order of confinement for having been exposed to a contagious disease. The statute on which it is based does not provide for or contemplate such an order. But that statute is only one of a body of laws designed to protect and preserve the public health. Such an object is a chief end of government, and the legitimate exercise of the power of the state for the accomplishment of such a purpose is a governmental duty which falls within the police power. Its origin rests in necessity. The prevention of the spread of disease is required either by express statutory provision or by the necessary implication arising out of the imposition of such a duty.

The Connecticut statute, Section 2531, as amended in 1905, invested the health officer of the borough of Naugatuck in common with the health officer of every city and borough of the state with "all powers necessary and proper for preserving the public health and preventing the spread of diseases therein." Statutes whose object is the protection and preservation of the public health should receive a liberal construction. The powers conferred by Section 2549, to prevent the spread of contagious diseases, are not exclusive, and do not limit the power conferred by Section 2531, as amended, over the spread of contagious diseases to orders relating wholly to the person who has the disease or whom the health officer has reasonable grounds to believe to be infected with such disease. The power to make all reasonable health regulations, including the quarantine of those who may have been exposed to contagious disease, is within the fair intendment of the powers conferred by Section 2531, as amended. The violation of such an order or regulation would be within the penalty of Section 2552.

The health officers of the state are not only bound to make all necessary and proper regulations to prevent the spread of disease, but they are bound to exercise the highest diligence in enforcing these regulations. Common knowledge tells us that contagious diseases may be communicated by those who have been exposed to the diseases. And it is the common practice for the health authorities to detain all such persons from going abroad so long as the danger of contagion is imminent from those who have been exposed.

The court affirms the legality of reasonable quarantine regulations by the Naugatuck borough health officers, designed to prevent persons infected with a contagious disease, or suspected by the health officer, on reasonable grounds, of either infection or exposure, from intercourse with other persons in the community. But the prosecution for violation of the regulations must be based on the order made.

As no complaint was made of this order on the ground that no period of confinement was specified, the court assumes that the period intended by the order was the duration of the danger from the disease to be determined by the health officer. Such an order was a reasonable quarantine regulation.

A mother who directly violates a lawful order of a health board, whether made under Section 2549 or not, or who knowingly permits her child for whose custody she has legally been made responsible to violate that order, is equally guilty of the offense whose penalty is prescribed by Section 2552. The jury might under the facts before them have found the existence of such an order.

One instruction to the jury gave rise to the question whether there exists an experience or probability so general as to have resulted in a presumption of universal acceptance, in the absence of proof to the contrary, that when a child is abroad in violation of a quarantine order this is with the mother's knowledge and consent, or whether there is any policy or convenience of the law which has compelled the acceptance of such a presumption. The court thinks that there is no policy of the law to rest this presumption on, and that experience proves the reverse of this assumption. A mother's love for and care of her sick child is the general presumption of all people, of all times, and of every social rank. There is no presumption of law that the mother knew and consented to the violation of the quarantine order, and hence the trial court erred in charging that the state made out a prima facie case against the mother by mere proof of the violation of the order by the children. Whether any inference was to be made of the mother's knowledge and consent to the violation of the quarantine order from the circumstances of this case was an inference of fact within the province of the jury. An inference which may or may not be drawn by the jury is far different from a presumption of law which must be drawn until proof to the contrary is offered.

The court was clearly right in taking judicial notice that scarlatina is an infectious or contagious disease.

### City without Right to Pollute River with Sewage

*(Attorney-General vs. City of Grand Rapids (Mich.), 141 N. W. R. 890)*

The Supreme Court of Michigan says that this was a proceeding to declare and to abate and restrain the continuance of an alleged public nuisance which was claimed to result from acts of the city in conveying through artificial means its sewage into the Grand River, which flowed down the river and was cast on the lands below that city, and particularly on those lands which are adjacent to and within the village of Grandville. In the court's opinion the equities of the case were with the complainants, and the testimony made out a case of public nuisance. If the city in emptying its sewage into Grand River, as shown by the evidence, created a nuisance to the public or riparian proprietors below the city, the continuance or creation of that nuisance might properly be restrained by injunction, and the attorney-general was a proper complainant.

Undoubtedly the city has the right to make a reasonable use of the waters of the river as a riparian owner. But the court's attention has not been called to any statute giving the city the right to use Grand River below its limits as a sewer for the purpose of carrying away its waste and refuse in an unreasonable manner; and, if it were attempted by statute to give such a right, the statute would be unconstitutional, unless it first provided that the owners of property along the river should be compensated for damages to be first determined by constitutional methods for destruction of such property rights. If the city creates, or threatens to create, a public nuisance, particularly outside of its corporate limits, it is subject to the same rules as would be a private individual, particularly when in the creating of such nuisance it acts not in a governmental but in a private capacity.

There can be no prescriptive right, that is from long usage, to pollute a stream by the discharge of sewage in such a manner and to such an extent as to be injurious to the public health. Even assuming that a prescriptive right to foul a stream with sewage can be acquired, such must be restricted to the limits of it when the period of prescription commenced; and if the pollution be substantially increased, whether gradually or suddenly, the court will interfere by injunction to prevent the wrongful excess; and, if it be impossible to separate the illegal excess from the legal user, the wrongdoer must bear the consequences of any restrictions necessary to prevent the excess, even if it unavoidably extends to the total prohibition of the user.

No person is entitled on the ground of ancient custom to the privilege to collect a mass of sewage matter and pour it at one point into a stream in such a quantity that the river cannot dilute it on its passage down to the lower riparian proprietors, as the effect of such an act is to create an evil which must be illegal, being such as no custom can authorize. The general rule is that sewage cannot be cast into the stream to such an extent as to pollute it. Sewage cannot be thrown into the stream in such a way as to render the water foul and unfit for use.

Wherefore the decree of the court below in favor of the defendants is reversed, and one entered for the complainants restraining the city, its boards, officials, servants and agents from continuing to discharge the sewage of the city into the Grand River, until the same shall have first been, by the use of a septic tank or tanks, so deodorized and purified as not to contain the foul, offensive or noxious matter (which it now contains) capable of injuring the complainants or their property, or causing a nuisance thereto; such injunction to become operative one year after the date of the settling of decree. The complainants will also recover of the defendant city their costs of both courts.

### Physician's Liability—Presumptions Do Not Relate Backward

*(Adams vs. Junger (Iowa), 139 N. W. R. 1096)*

The Supreme Court of Iowa reverses for trial errors a judgment for alleged malpractice in the treatment of fracture of the neck of the femur of the plaintiff's left leg, sustained January 11. The defendant was immediately called, and arrived at the plaintiff's house within an hour and a half of the time she received her injuries. He continued to treat the case until May 29. On June 5 the plaintiff's husband called on the defendant and paid his bill, making no complaint. A roentgenoscopy, made June 24, disclosed the fact that the fracture had not been reduced, that there was a non-union of the broken bones, and that one end of the bone had extended up into the flesh for an inch or more, causing excruciating pain; but there was no testimony of any negligence on the part of the defendant in his original treatment, or in the use of the appliances which he did in fact use.

There was error in the instructions given to the jury. If the court had in mind the thought that the defendant did not, in discharging the plaintiff, properly direct her as to the care of the limb, or that he did not then examine her for misplaced bones, he should have instructed the jury that it could not allow for any pain or suffering occurring prior to the time that the defendant was found to be negligent. In other words, if, as the court instructed, the defendant was not negligent in his original treatment, he *could not* be held for any suffering endured by the plaintiff during the time this treatment continued, and, if held responsible for something occurring after this treatment ceased, he should be held liable only for such pain and suffering, if any, as resulted from his negligence at that time, and not for what might have been endured from the beginning. And, in any event, the plaintiff could not recover, unless she proved the negligence charged in her petition, and her damages must be limited to such as proximately arose from the negligence charged.

Presumptions do not ordinarily relate backward. A condition, once shown, may be presumed to continue; but ordinarily from a condition once found no presumption is indulged that it has existed for any given time in the past. True, such presumptions sometimes arise in virtue of the nature of the condition; but this arises from proof of other things in addition to present conditions, as its condition of permanency of progressiveness.

### Liability of Agent of Corporation for Unlawfully Practicing Medicine

*(Norwood vs. State (Texas), 158 S. W. R. 270)*

The Court of Criminal Appeals of Texas says that the main contention in the court below of the appellant (defendant), who was convicted for unlawfully practicing medicine, was, in effect, that, while numerous patients were treated in the hospital of which he had charge, it belonged to a corporation, and he was the mere manager, employee and agent of the corporation in whatever was done in the way of treating patients, receiving pay therefor, etc. The court at his instance gave this special charge to the jury: "You are instructed that if you believe from the evidence that the treatment given to Vinnie Spangler was given by the Norwood Institute, a corporation, and not by the defendant, then, in that event, your verdict should be for the defendant, and you should say by your verdict not guilty." This special charge was not the law and should not have been given. Even if he was an officer, agent, servant or employee of said corporation and committed the offense charged, even though purporting to act or acting for the corporation, he would be guilty. Mr. Bishop in his Criminal Law, in Section 892, says, "An agent or servant who, knowing the facts, does a criminal thing for his principal or master, is answerable to the criminal law precisely as though he had proceeded self-moved, and for his own personal benefit. And it is the same when with the like knowledge he merely assists therein." Again, in Section 685, he says, "The authorities agree that there are in misdemeanor no accessories either in name or in the order of the prosecution." Mr. Branch in his Texas Criminal Law, Section 681, lays down this rule: "There is no distinction between principals and accomplices in misdemeanors; a party who would be an accomplice if the offense was a felony is a principal if the offense is a misdemeanor. If defendant comes either within the definition of an accomplice or a principal, he is a principal in a misdemeanor." Then there was a fatal variance between the allegations and the proof in this case in that the allegations charged that the defendant did unlawfully treat a disease or disorder, to wit, did treat Vinnie Spangler for consumption, diagnosing her case and prescribing some gas treatment therefor, while the proof did not establish or tend to establish that Vinnie Spangler had consumption or was treated for consumption.

**Small-Pox.**—Eleven of the thirteen patients now in the small-pox hospital of Chicago, qualifying for waffle-iron faces, came from a "health institute" which denounces vaccination as wicked, superstitious, useless, nasty, impertinent and an "invasion of personal rights." This condition is typical. Small-pox has been well named the "poisoned arrow of the fool-killer." Those who want to escape these arrows had better provide themselves with the only shield that experience has proved effective—vaccination.—Chicago *Journal*.

# Society Proceedings

## COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

## CHICAGO-PEDIATRIC SOCIETY

*Regular Meeting, held Nov. 21, 1913*

The President, Dr. Frank X. Walls, in the Chair

### Report of Two Cases of Pachymeningitis Hemorrhagica

Dr. Grace Meigs: This condition has been well recognized in the adult for a long time, but only recently as not uncommon in children, especially in infants. The onset is characterized by convulsions, vomiting and signs of acute meningitis. In 1881 it was first suggested that the condition could be diagnosed during life. Finkelstein, in 1904, suggested that a puncture of the fontanel could be made in these cases, and a bloody fluid, characteristic of the disease, could be obtained. He also was the first to mention the presence of retinal hemorrhages.

The cause of pachymeningitis hemorrhagica has been variously explained. The older writers, in describing the condition in adults, ascribed it chiefly to tuberculosis and syphilis, but Huebner thinks that congenital syphilis is by far the most frequent cause; also chronic gastro-intestinal diseases. Finkelstein, however, thinks that rickets is the most important predisposing cause. Hahn suggests that it is a manifestation of the hemorrhagic diathesis. Virchow thinks that the primary lesion is an inflammation of the dura mater. All are agreed that it is apparently due to toxins.

The post-mortem findings are characteristic. The inner surface of the dura is covered with a membrane, most abundant on the convexity, but usually present all over the dura. It is rather closely adherent, but can usually be peeled off from the dura, leaving it quite smooth and only somewhat thickened, with a few ecchymoses. The membrane varies in thickness from the most delicate cobweb-like membrane to a very thick connective-tissue layer. There are many layers, and between them the hemorrhage occurs, spreading them apart so as to form a bag, into which there is often an effusion of fluid, and then probably later hemorrhages; at least all stages are found with simply a yellow fluid or a fluid containing blood, or simply with blood-clots. The brain itself shows no changes, except evidence of pressure.

It is not known just what the effects of such a condition would be on the brain in after-life. It is possible that some of the paralyses of childhood may be due to this condition. The spinal fluid in all the cases reported contained some blood —very often only found microscopically; but sometimes the fluid was markedly hemorrhagic.

In some cases no clinical symptoms of any kind are shown during life, but the condition is found post mortem. In those which do show symptoms there are two classes: First, the symptoms are those of hydrocephalus with recurring attacks simulating an acute meningitis, with coma, convulsions, vomiting, strabismus, opisthotonos and all the other symptoms; secondly, the symptoms are merely those of hydrocephalus, together with perhaps increased reflexes or a little rigidity. In both classes there is evidence of a hydrocephalus —that is, the fontanel is large and bulging, the sutures are gaping, and there is often a hydrocephalic stare. This enlargement of the head is sometimes very sudden. The most characteristic findings are those of a choked disk and retinal hemorrhages, the latter being fairly diagnostic. Important for diagnosis, however, is the finding of fluid on puncture of the fontanel, and this procedure is quite without danger in all cases. The only thing to be avoided is puncture of the central sinus, which can easily be done by making the puncture at the lateral angle of the fontanel. A needle with a short point is used. In the positive cases, immediately on going through the skin and somewhat resistant dura there is a gush of fluid, under mild pressure. This fluid is quite characteristic, being composed of a bright yellow or orange serous layer, and a layer of dark, chocolate-colored erythrocytes. These show evidence of having been long in the fluid. The erythrocytes settle at the bottom when the fluid stands, and there is no coagulation.

In treatment, probably the most commonly used measure is lumbar puncture, and this is proved to have good effect because several patients who have been observed through the course of the disease and have died from some other diseases afterward have shown the trouble in the stage of resolution and cure. Finkelstein does not think that puncturing the fontanel does any permanent good. He advises the use of gelatin, and injects 20 c.c. of a 10 per cent. solution. Huebner uses the antisyphilitic treatment with the idea that most of the cases are syphilitic, and he has seen good effects.

My first case while not a definitely proved case, was very suggestive of this condition. The baby was 3 months old, and was admitted with the diagnosis of hydrocephalus. There was no syphilitic or tuberculous history. The condition of the head had been present since birth, but had lately been getting worse. Examination showed a well-developed child; the head was enlarged and the sutures separated; the eyes were turned to the right and fixed. A few days later the right arm was inverted and flexed, and not moved; later the left arm showed the same condition. For the first few days the condition was quite good, but about three days after entrance an acute attack began, with convulsions, lasting one and a half minutes, with twitching of the right side of the face. Temperature was 101 F. Stools were good at this time. Lumbar puncture showed fluid under a high pressure; there were 7,000 leukocytes to the cubic centimeter. Noguchi was positive. There was no evidence of syphilis. Reaction was positive for a condition of inflammation. The cultures and smears were unsatisfactory. An organism was seen which the pathologist considered a contamination. It looked rather like an influenza bacillus. A tentative diagnosis of pachymeningitis was made, and puncture of the fontanel on the left side done because the symptoms were so well localized on the right side. The fluid was obtained under quite mild pressure, was opalescent and with quite a mixture of blood, but was not yellow On standing, it coagulated and there was a marked deposit of blood. It was sterile. Spinal puncture made at the same time gave an opalescent fluid, with a slight precipitate of blood. It was seen only after having stood for twenty-four hours. The blood was evidently thoroughly mixed with the fluid. The leukocyte count was 100 per cent. No cell count was made, on account of the mixture with blood. After this the child's condition improved, but later it developed nasal diphtheria and died.

The second case was undoubtedly one that could not be diagnosed during life. There were no symptoms except enlargement of the head. The child was 4 months old, and was brought into the hospital, not on account of the condition of the head, but merely because of the failure to gain, vomiting and constipation. It had a history of gastro-intestinal disturbance. The child was small, emaciated and old-looking. The head was very large and the face small; the anterior fontanel was 4 fingers in diameter. The coronal suture was very wide: the other sutures were plainly palpable. The circumference of the head was 41.25 cm. The neck was not rigid. General examination was entirely negative, except for the emaciation and for the finding of an enlarged spleen and enlarged lymph-nodes. The urine was negative. The Wassermann reaction, both in blood and in spinal fluid, was negative. Lumbar puncture was performed and 20 c.c. of fluid obtained—quite clear and under considerable pressure. The remarkable thing in the course of this case was the decrease in the size of the head (from 41.25 cm. on entrance to 39 cm. at death), which began very soon after the lumbar puncture. While in the hospital there was gradual loss in weight, very bad stools, and finally, twenty-four days later, during very hot weather, the child died quite suddenly. The diagnosis was decomposition and internal hydrocephalus.

Post-mortem was made thirty-six hours after death, and an examination only of the head made, and the condition of pachymeningitis hemorrhagica shown. When the skull cap was taken off bloody fluid escaped, and we found that the inner surface of the dura was entirely covered with a membrane which was in some places quite delicate and thin, and in others thick. It could be peeled off the dura, but was rather firmly adherent in some places. The base of the brain was also covered with the same membrane. There were a great many different layers to be distinguished, and in one place, over the left anterior portion, underneath the puncture, there was about an ounce of bloody fluid. The brain itself was soft and the surface quite negative. There was a moderate degree of internal hydrocephalus present. Microscopically, the dura was thickened and this membrane showed all the different stages of granulation tissue and connective tissue. In some places numerous large blood-vessels were seen, and in other places ecchymoses.

### The Feeding of Five Hundred Infant-Welfare Babies

**Dr. R. A. Krost**: The work done at the conference now is exceedingly gratifying, the former distrust shown by mothers has disappeared, and they now follow our instructions quite faithfully in most cases. The gospel of regularity of feedings, the use of certified milk and the longer interval of feeding has spread, as evidenced by the number of new cases. Individual milk prescriptions calling for certified milk are given. They are prepared by the nurse at the baby's home until the mother can prepare them correctly. The feedings are made as simple as possible, using usually an ounce and a half of certified milk to the pound weight of the child. The milk is diluted with barley-water in varying amounts, according to the child's age, and to the diluent about 5 per cent. cane-sugar is added, although almost never is more than ¾ ounce used. I think that 2 ounces is nearer the amount necessary to bring about a 4-ounce gain or more per week with the small amount of sugar used. Cane sugar is used because it is cheaper. In cases of diarrhea the babies were put on saccharin-sweetened barley-water for from twenty-four to thirty-six hours; then diluted boiled skimmed milk was used, then diluted whole milk, and, lastly, sugar was added. Early in the work I fed the babies on the four-hour interval plan, and later changed it to three because of the inability to feed the ordinary healthy baby enough food to satisfy its caloric needs by the four-hour feeding without using too concentrated a food or too much sugar. Between feedings a few ounces of boiled water were given, if the infant cried.

A mistake too often made in the cases of malnutrition and marasmus is a frequent change in food. A baby becomes adapted to its food; therefore, it is unwise to change it. The weight may remain stationary for a time, or there may even be a slight loss, but eventually there is a gain. In addition to the milk, once a day we gave the babies aged 6 months or over, and sometimes even younger babies, broths containing crumbled toast or farina. Probably the addition to the cow's milk diet brought about its better digestion and assimilation.

I have used boiled milk for six months and found no bad effects from its use. Constipation is perhaps a little more frequent and persistent than on raw milk, but not much. There is little vomiting, less than on boiled milk, and less colic. The gains are about the same from week to week, but greater on boiled milk if followed for months.

There were twenty-eight deaths from all causes in 5,475 cases, a percentage of 5.8. In eighteen cases diarrhea or nutritional disturbance was the cause. These diarrhea deaths occurred during July, August and September.

#### DISCUSSION

**Dr. Albert H. Beifeld**: The most common causes of infant mortality are poverty, ignorance and neglect. Simple mixtures should always be used. One of the most important points is the training of the physician. He should learn that each component of breast-milk has a definite physiologic action in digestion and nutrition, and he should be able to manipulate each one of the components so that he will obtain a result without having to rely on the complicated mixtures, such as *Eiweissmilch*, buttermilk, malt soups, etc. There are certain faults which we are tending to fall into in this matter. One is that we do not give enough fat in the food, and another that we are inclined to a rather slavish adherence to the malt-dextrose preparation. Just as the mother should be trained to develop a certain sense of independence in caring for the baby and understanding how to control its feedings, so the baby's intestine should be trained to endure the more actively fermenting sugars, such as cane-sugar or milk-sugar, and if we persist slavishly in the use of malt-dextrose preparations we are pampering the baby's intestine. These things should be used as therapeutic measures, as intended by the inventor. I endorse the early addition of foods in the feeding of these bottle-fed babies. It has a striking effect, when we give a little portion of soup each day to the baby which has been fed solely on milk. I have seen several babies recently that have been brought from hospitals where they have been fed according to rule and regulation and the highest dictum of our scientific calling, and they were in a miserable condition because they had had nothing to eat.

One other point: We can get along very nicely without the use of *Eiweissmilch* by the administration of simple protein, the dried casein preparations. I recall two cases, with astonishingly striking results, in which, after three, four and five weeks of these slow losses in weight, the addition of a certain casein preparation brought about a gain in weight in two or three days. I think that we are inclined to be afraid of the amount of sugar used. It is neither a foreign body nor a poison. I think that just as we should use a sugar which will train the baby's intestine, we should use as liberal a supply as the condition demands. The outlook is very good in the home modification of milk. At first the mothers are a little bit slow, but when they see the results they become enthusiastic.

**Dr. H. F. Helmholz**: Dr. Krost thinks that very few cases of diarrhea are due to overfeeding. I should like to call attention to the large series of cases published by a pediatrician in Breslau, in which babies, given as low as 50 and 60 calories per kilogram of weight, gained very rapidly. On questioning the mothers closely it was found that they were giving the babies additional food. Even though we have these mothers very much under our control, still a great deal of food is given, frequently in excess of that which has been ordered.

**Dr. Frank X. Walls**: These results are particularly interesting, when we consider that only 3.8 per cent. of these babies die. It is in striking contrast to the figures in our text-books as to the death-rate among artificially fed babies. When we consider this low mortality at the conference, it would seem as if the death-rate mentioned comes in great part from the other large majority which are under the treatment of physicians who probably have not the training that the conference physicians have.

The question of weaning babies is an important one. I have found in private practice that great harm often comes from attempting to put a baby who has received only mother's milk for seven, eight or nine months, on other food. It will often refuse it for a week and become desperately ill.

**Dr. Joseph Brennemann**: We are perhaps apt to overlook the striking results obtained with such simple measures. That point should be emphasized. When we think of what the mortality ordinarily is, one is impressed with the fact that these results are striking. Practical infant-feeding cannot be learned in a hospital—it is an ordinary proposition. The vast majority of babies are fed in the home, and conditions in hospitals are entirely different. I am not saying anything against the work done in hospitals, but such a paper as this, giving such results, would certainly lead one to think that there is a good deal in the idea that babies ought to be fed at home as much as possible.

## The Use of Dextrose Solutions in Acute Intoxication in Infants

**Dr. H. F. Helmholz**: In such cases, because of a severe diarrhea, food must be administered by the subcutaneous or intravenous route. It has been customary to give simply a sodium chlorid solution, isotonic with the blood, or Ringer's solution. Recently Kausch called attention to the advantage of giving sugar solution instead of a saline solution. He used a 5 to 7 per cent. solution of dextrose, giving a liter either subcutaneously or intravenously. The sugar is not only well tolerated, but the worse the condition, the greater the sugar tolerance. In cases of cyclic vomiting, which are usually marked by an intense acidosis, saline-dextrose solutions by clysma by the drop method have given good results. It seems probable, therefore, that dextrose added to Ringer's solution should act beneficially in cases of acute gastro-intestinal intoxication marked by acidosis, extreme prostration, vomiting, diarrhea and collapse.

Our routine method of treatment is to withhold all food for from twelve to twenty-four hours, giving merely water or tea by mouth, and stimulating the failing circulation by the use of caffein, camphorated oil, brandy and saline solution subcutaneously. The demand for food is great. All of the infant's resources are being exhausted by the disease. The only route for placing food in the body is the subcutaneous or intravenous. In such cases dextrose is the ideal agent to use. It can be given subcutaneously, say 50 c.c. of a 50 per cent. solution, without harm. Almost 60 gm. have been given, with only a trace appearing in the urine. The most important thing to ascertain is whether the dextrose solution is indicated, whether it has any effect on the rapid loss of weight, and whether its presence in the tissues leads to edema. Finally, what are the effects on the clinical picture?

The solution is prepared as follows: To 1,000 c.c. of freshly distilled water add dextrose, 60 gm.; sodium chlorid, 7.5; sodium bicarbonate, 0.2; calcium chlorid, 0.2, and potassium chlorid, 0.2. Filter and sterilize in flasks of about 100 c.c. capacity. The solution is given hypodermically, either by gravity or by means of a large syringe, in doses of from 50 to 200 c.c. It is injected under the skin of the abdomen or under the pectoral muscles. The smaller doses at shorter intervals are preferable.

We have given the solution in about twenty cases, most of the patients being *in extremis*. In not a single instance was sugar found in the urine. Unfortunately, the stools were not examined for sugar, although it is probable that only very small amounts of sugar left the body through that tract. It would appear, therefore, that the infant in a state of intoxication can tolerate from 4 to 6 gm. of sugar two or three times a day and completely utilize it. Whether or not concentrated solutions can be given with greater benefit is unknown. A study of the weight-charts shows that the water is retained better with the sugar than without it, so that the sugar solution is preferable to the salt solution. In several instances in which the toxemia was intense the loss of weight was comparatively slight, and at no time during the injection was there any palpable edema to explain the maintenance of weight. In some instances the weight was greater at the time of death than on admission. In only exceptional cases were the losses in weight such as one is accustomed to see in these cases. In some cases of intoxication there is apparently no effect from the use of sugar solution. In the majority of cases, however, there was quite a definite improvement (1) in the tendency to come out of the coma; (2) in the improvement of the turgor, and (3) in the circulation. In one or two instances it seemed to be the only thing that kept the infant alive.

### DISCUSSION

**Dr. J. H. Hess**: Did you notice the effect of the administration of dextrose on the acetone in the urine? How long did you keep these babies on the dextrose, on the average?

**Dr. H. F. Helmholz**: Usually we kept them on water for from about twelve to twenty-four hours, and then started them either on very minute amounts of *Eiweissmilch* or breast-milk. The other routine was about as we have been accustomed to doing. We kept up the use of dextrose solutions for longer periods after we started other foods, but otherwise the feeding was carried on just about as usual. We could not obtain any urine until after giving the solution—and in one case it was twenty-four hours after.

Dr. Albert H. Beifeld: Did you find albumin in almost every case? It has seemed to me that an irritated kidney sometimes holds back the salt and sugar, just as we hear of a diabetes being controlled by a nephritis. If you had a nephritis in every case it might explain the absence of sugar in the urine.

Dr. H. F. Helmholz: After we got further along, we obtained specimens of urine in which there was no albumin, but, as Dr. Beifeld undoubtedly knows, it is usually most severe. We found casts and albumin, but they did not seem to have any related function, nor did the retention of sugar seem to have any relation to the irritation of the kidney from the other cause.

# *Current Medical Literature*

## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### Archives of Ophthalmology, New York

*November, XLII, No. 6, pp. 577-691*

1 New Instruments for Measuring Visual-Field Defects. C. B. Walker, Boston.
2 Some Forms of Retinal Tuberculosis. A. Knapp, New York.
3 Discission of Crystalline Lens. E. Jackson, Denver.
4 Clinical and Anatomic Report of Case of Congenital Distichiasis. H. L. Begle, Detroit, Mich.
5 Pathogenesis of Scleral Staphyloma. A. F. Mattice, Seattle, Wash.
6 Weight of Infants' Lenses and Their Solids. C. A. Clapp, Baltimore.

### Arkansas Medical Society Journal, Little Rock

*November, X, No. 6, pp. 145-166*

7 Skin Grafting. St. C. Cooper, Fort Smith.
8 Phenol-Petrolatum. S. S. Warren, San Angelo, Texas.

### Boston Medical and Surgical Journal

*November 27, CLXIX, No. 22, pp. 777-816*

9 *Clinical Value of Wassermann Reaction. A. Post, Boston.
10 *Comparative Psychology in Relation to Medicine. R. M. Yerkes, Cambridge, Mass.
11 *Problems of Adolescent as Seen in Psychopathic Hospital Outpatient Department, Boston. W. P. Lucas, San Francisco.
12 *Transfusion by Means of Glass Cylinders. A. R. Kimpton, Boston.
13 *Use of Bacterial Vaccines in Acute Septic Conditions of Oral Cavity Met with by Dentist. L. S. Medalia, Boston.
14 *Cancer Control. J. C. Bloodgood, Baltimore.
15 *Effect of Nitrogenous Waste Products in Blood in Chronic Interstitial Nephritis. M. Seymour, Boston.
16 Terminology of Medicine in Relation to Its Original Sources. S. Deland, Boston.

9. **Value of Wassermann Reaction.**—Post suggests that the Wassermann reaction should be regarded as a symptom like other symptoms, and in relation to other symptoms, it will prove a wonderful help. To insist on calling it a test, confuses rather than aids.

10. **Comparative Psychology in Relation to Medicine.**—Yerkes says there are no aspects of organic reaction which are not worthy of accurate measurements in a psychologic investigation. The reflexive and the instinctive often prove to be quite as important as the impulse or voluntary. Comparative psychology deals with facts and principles which are of extreme importance to the physician; it deals with these facts in a systematic, quantitative, law-evoking manner which renders it immediately serviceable to medicine.

The situation in Yerkes' opinion is this: A science of conscious behavior, introspective and quantitatively observational, comparative and rigorous in its demands for verifiability, is developing. Will those who are interested in medical education make use of it or will they continue to permit students to grapple with the problems of human nature without systematic training in the methods of studying conscious behavior, and without a good working knowledge of the facts and principles of human behavior? It is a case of "heads I win, tails you lose," for comparative psychology has much to give and medicine much to gain, and whether or not students of medicine avail themselves of its assistance, it will progress steadily, little by little supplying the principles of organic nature which should enter into the foundations of our social sciences and guide in the varied applications of natural science.

11. **Problems of the Adolescent.**—During the last eight months Lucas examined 123 patients between the ages of 10 and 20 years; 71 per cent., or 88, of these showed some evidence that adolescence had some relation to the condition for which they were brought in. The reasons for bringing these cases in was mainly mental examination. Physical examination brought out the fact that over 39 per cent. of these individuals were normal; under par, 30.89 per cent.; nervous, 24.39 per cent.; those having speech defects, 12.19 per cent.; eye, 9.75 per cent.; ear, 4 per cent.; epilepsy, 5 per cent., and enuresis, 4.87 per cent.; also those having had previous convulsions, 6.5. Naturally, the greatest disturbance was in their volitional powers; a very large percentage being defective or retarded (57.7 per cent.).

12. See The Journal, Nov. 1, p. 1628.

13. **Bacterial Vaccines in Acute Septic Conditions of Mouth.**—Medalia attempts to show by a citation of cases that vaccine treatment is of value in acute septic dento-alveolar abscesses—even the worst types of mandibular impacted third molar abscesses having apparently yielded well to this treatment. Such cases with septic apical abscesses, especially the deep-seated ones or the so-called blind abscesses, acute and subacute, have been greatly benefited by the vaccine method of treatment. Medalia believes that there is a big field for vaccine treatment in acute and subacute dento-alveolar abscess cases and its wide-spread use will save considerable suffering and loss of teeth to the patient, and annoyance to the dentist.

14. Abstracted in The Journal, December 6, p. 2100.

15. **Nitrogenous Waste Products in Blood in Chronic Interstitial Nephritis.**—The effect of high and of low proteid diet on patients suffering from chronic interstitial nephritis, with increased arterial tension was studied by Seymour. Fourteen patients were selected, each case having an arterial hypertension, persistent low gravity urine, with small amounts of albumen, and rare hyaline casts. For five days the patients were given the regular hospital diet, which contained about 60 grams of proteid. At the end of this period the proteid content of the diet was increased and this diet maintained for seven days. By the sixth day they were given about 180 grams of proteid daily. During the next period of eight days, the proteid was reduced, so that they were given very small amounts, the daily average for this period being about 12 grams.

The nitrogen content of the blood was measured at the end of the normal hospital diet period, and at the end of the high and of the low proteid diet periods. Urinary nitrogen determinations were made daily, except on the days when the phenolsulphonephthalein tests were made. These latter were made five times during the course of the experiment. Out of the fourteen cases, eight showed an increase in the nitrogen content of the blood at the end of the high proteid period. Of these eight cases showing a nitrogen increase, six had edema of the face with puffiness of the eye-lids, and complained of nausea and headache. All of these patients vomited, and in each case refused food at the end of the sixth day. Two of the patients who showed the greatest increase in the blood nitrogen, had more marked symptoms than those showing a more moderate one. Two cases showing an increase in the nitrogen, had no symptoms.

Of the six patients showing no increase in the nitrogen of the blood, one had only edema of the face, two had nausea and vomiting with slight edema of the face, two were drowsy, dull, and complained of headache. One patient showing no nitrogen increase, had no symptoms. Two showed a simple irregularity, three no change, and one patient showed a lowering in the blood-pressure. There seemed to be no relation between the arterial tension and the low proteid diet during the eight-day period the diet continued. In some cases there was an irregularity, in some a rise, and in others a fall in the pressure; even though the nitrogen content of the blood was greatly diminished in every instance.

### Bulletin of Johns Hopkins Hospital, Baltimore

*November, XXIV, No. 273, pp. 327-362*

17 *Experimental and Clinical Study of Value of Phenoltetrachlorphthalein as Test for Hepatic Function. L. G. Rowntree, S. H. Hurwitz and A. L. Bloomfield, Baltimore.
18 *Tests for Hepatic Function and Disease under Experimental Conditions. G. H. Whipple, T. C. Peightal and A. H. Clark, Baltimore.
19 *Test for Hepatic Injury: Blood Lipase. G. H. Whipple, Baltimore.

17. **Value of Phenoltetrachlorphthalein as Test for Hepatic Function.**—However, the constant findings in health, the decreased output in liver disease, the analogy between the effect of anemia and myocardial insufficiency on kidney and liver function as indicated by the sulphonephthalein and the tetrachlorphthalein tests, the results of the test in experimental liver lesions, and the established value of sulphonephthalein, based on the same principle as the test in kidney diseases, the authors believe, all indicate that the excretion of tetrachlorphthalein will be useful in the estimation of the functional capacity of the liver.

18. **Test for Hepatic Function.**—This test, the authors believe, promises much in the study of derangements of the hepatic parenchyma, physiologic and anatomic. Its great value is that it may give some quantitative values concerning liver injury, and for this reason, with accumulated experience, may be of value to the clinician.

19. **Test for Hepatic Injury.**—A study of the lipase of the blood, Whipple says, will show a definite rise above normal in practically all cases of eclampsia, liver injury with necrosis due to poisons, intoxications or infections, acute yellow atrophy, cholangitis and abscess of liver with considerable destruction of liver tissue. Cirrhosis of the liver may show a subnormal lipase; it may react to liver injury by a rise in blood lipase, but this point will require more study.

### Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

*November, VI, No. 5, pp. 71-90*

20 Cooperative Health Work. C. H. Jones, Baltimore.
21 Non-Pasteurized Milk of Baltimore. J. H. Sewell, Baltimore.

### Canadian Medical Association Journal, Toronto

*November, III, No. 11, pp. 931-1026*

22 Thomas Sydenham, the English Hippocrates (1624-1689). W. J. Fischer, Waterloo, Ontario.
23 Some Psychiatric Problems from General Practitioner's Standpoint. C. S. McVicar, Toronto.
24 *Relationship between Tumors Proper (Blastomas) and Hyperblastosis. J. G. Adami, Montreal.
25 Huntington's Chorea. G. A. Shannon, Sparta, Ontario.
26 Diseases of Thyroid Viewed from Standpoint of Surgeon. A. J. Ochsner, Chicago.

24. **Tumors Proper and Hyperblastosis.**—Whatever be the essential cause of the autonomous blastomas, Adami states, we have in these hyperblastoses a group of diffuse overgrowths which by analogy must be regarded as due to disturbances of metabolic equilibrium; which, further, in their simple nonmalignant stages at least, may possibly be combated eventually (certainly not to-day) along the lines of organotherapy. Every transition is observable in this series between the development of overgrowths of fully differentiated tissue, nonmalignant grades of anaplasia, and diffuse malignant infiltrative growths. This suggests strongly that the causation of malignancy is not to be sought for in the entry and action of external agencies, but in stimulation of the growth properties of specific tissues by changes in what Adami terms tissue equilibrium. The more we study, the more we become impressed by the fact that the number of conditions of hyperblastosis, whether simple or malignant, is relatively considerable, so considerable as to deserve separate consideration.

### Colorado Medicine, Denver

*November, X, No. 11, pp. 323-358*

27 Bile-Tract Infections and Their Concomitant Correlated Diseases. L. L. McArthur, Chicago.
28 Roentgenoscopy in Gastro-Intestinal Disease. S. B. Childs, Denver.
29 Salvarsan in Treatment of Syphilis. W. C. Mitchell, Denver.

### Indiana State Medical Association Journal, Fort Wayne

*November, VI, No. 11, pp. 485-530*

30 Roentgenoscopy of Gastric Cancer and Ulcer. R. D. Carman, Rochester, Minn.

### Journal of Cutaneous Diseases, New York

*November, XXXI, No. 11, pp. 799-974*

31 Research Studies in Psoriasis. J. F. Shamberg, J. A. Kolmer, A. I. Ringer and G. W. Raiziss, Philadelphia.
32 Angioma Serpiginosum (Infective Angioma of Hutchinson), with Report of Very Extensive Case. F. Wise, New York.

### Journal of Infectious Diseases, Chicago

*November, XIII, No. 3, pp. 351-523*

33 Value of "Abortin" as Diagnostic Agent for Infectious Abortion in Cattle. K. F. Meyer and J. B. Hardenbergh, Philadelphia.
34 *Production in Monkeys of Antibodies for Human Corpuscles. L. Hektoen, Chicago.
35 *Some Experimental Work on Use of Methylene-Blue and Allied Dyes in Treatment of Tuberculosis. L. M. DeWitt, Chicago.
36 *Effect of Meat and of Meat Extract Media on Fermentative Activity of Streptococci. J. Broadhurst, Ithaca, N. Y.
37 *Influence of Strychnin, Caffein, Chloral, Antipyrin, Cholesterol and Lactic Acid on Phagocytosis. A. Arkin, Chicago.
38 Relative Constancy of Ammonia Production by Certain Bacteria. A. I. Kendall, A. A. Day and A. W. Walker, Chicago.
39 *Case in Which Fusiform Bacillus Was Isolated from Blood-Stream. W. P. Larson and M. Barron, Minneapolis.
40 Fusiform Bacilli: Cultural Characteristics. C. Krumwiede and J. S. Pratt, New York.
41 *Differentiation of Fecal Streptococci by Their Fermentative Reactions in Carbohydrate Media. C. A. Fuller and V. A. Armstrong, Madison, Wis.
42 Spirochaeta Suis: Its Significance as Pathogenic Organism. W. E. King and G. L. Hoffmann, Detroit.
43 *Antigenic Properties of Constituents of Pneumonic Exudate. C. C. Hartman, Pittsburgh.
44 Lesions Produced by Bacillus Proteus. W. P. Larson and E. T. Bell, Minneapolis.

34. **Production in Monkeys of Antibodies for Human Corpuscles.**—In the course of certain experiments on measles and other diseases in the monkey the opportunity was used by Hektoen to follow the development in the monkey of antibodies to human blood-corpuscles. His observations were made on five monkeys (*Macacus rhesus*) injected with human blood. The forms of antibody action detected were agglutination and, in one case, opsonification. The agglutinative mixtures were in quantity 0.6 c.c.; of this, 0.2 c.c. was a 5 per cent. suspension of washed human corpuscles, the rest, monkey serum and salt solution. The opsonic mixtures were made in the same way with the addition of washed monkey leukocytes obtained from exudates produced by the injection of suspensions of aleuronat into the pleural cavity, the total quantity here also being 0.6 c.c. The smears were made after an incubation of 37 C. for one hour.

There was no phagocytosis in similar mixtures in which human leukocytes were substituted for leukocytes from the monkey. The heated serum of these monkeys in quantities of 0.2 c.c., complemented either with fresh monkey serum or with guinea-pig serum (0.0125 c.c.), did not cause any lysis of human corpuscles (0.2 c.c. of a 5 per cent. suspension). No tests for precipitin were made.

The results of these observations as interpreted by Hektoen indicate that in the monkey, injections of human blood stimulate the formation of agglutinin and opsonin for human corpuscles, these antibodies describing the same sort of a curve, though of small range, as other antibodies after the injection of a single dose of antigen. If we may judge from just one or two instances, the injection of monkeys with comparatively small quantities of human blood gives a larger response than injections of large quantities. Hektoen suggests that the fact that monkeys respond in this way to human blood might be taken advantage of in differentiating between human and monkey blood, but self-evidently this would be possible only under very special conditions, so that the method would seem to have an extremely limited practical significance.

35. **Methylene Blue in Tuberculosis.**—It was found by DeWitt that methylene blue will penetrate the tubercle, stain the living tubercle bacillus, and in some cases kill the bacillus *in vitro* and in others lessen its virulence. When added to the culture media, a relatively small percentage of methylene blue will inhibit the growth of the human tubercle bacillus. DeWitt says that methylene-blue iodid is no less irritant than the chlorid and has less bactericidal power and no

greater therapeutic value. The new methylene blues used are various modifications of the methylene blue molecule and have in the main no advantage over methylene blue. New methylene blue GG, however, showed some effect in the one case in which it was used therapeutically and it, with other oxygen derivatives of methylene blue, will be given further tests.

Selenium blue and tellurium blue are new blue dyes in which the sulphur of the methylene blue molecule is replaced by selenium and by tellurium. They are weaker and less stable dyes than methylene blue and more toxic and less bactericidal than that dye. They penetrate the tubercle and are reduced in it and can be reoxidized; they stain the living tubercle bacillus, but more faintly than does methylene blue. In fact, they behave in all respects as weaker editions of methylene blue and have no advantage over it. Neither methylene blue nor any of the allied dyes tested by DeWitt had much therapeutic influence over experimental tuberculosis of the guinea-pig. While methylene blue seems for many reasons a favorable starting-point for tuberculosis chemotherapy, the author says that other modifications of it and probably many others must be tried before we can claim to have found a specific for this disease.

36. **Effect of Meat Media on Streptococci.**—Inasmuch as the fermentative activities of streptococci vary greatly with the use of meat or of meat extract in making the special media, Broadhurst suggests that all workers should state definitely whether meat or meat extract media were used throughout such investigations. Qualitative results, estimated with litmus as an indicator, are not comparable with quantitative ones, with phenolphthalein as an indicator, if meat extract is used in making the special media.

37. **Chemical Substances and Phagocytosis.**—From the results of experiments recorded in the literature and the results Arkin has obtained it appears that the effect of chemical substances on phagocytosis varies with their chemical constitution and their pharmacologic action. Alcohol, chloroform, ether, chloral, morphin and potassium cyanid depress phagocytosis *in vitro*. The substances all have an inhibitory effect on oxidation, to which their action on phagocytosis is in all probability due.

That oxidative processes play a rôle in phagocytosis is definitely shown by the fact that sodium iodoxybenzoate, which is an organic peroxid and owes its pharmacologic action as well as germicidal action to the presence of physiologically active oxygen attached to the iodin atom in its molecule, has a marked stimulating effect on the phagocytosis of streptococci and staphylococci *in vitro*. The action appears to be on the opsonin of the serum, which is rendered more active. Likewise strychnin and certain colloidal metals which have a stimulating effect on oxidative processes stimulate phagocytosis to a marked degree. The beneficial effects of improved oxygenation of the blood in infectious diseases may be due in part to the stimulating action on phagocytosis. Furthermore, substances which have a depressing effect on oxidations, as potassium cyanid, chloroform, ether, morphin, germicides, etc., have a distinct detrimental effect on phagocytosis as well as other immune reactions.

Caffein and the antipyretics which are more inert drugs have little, if any, action on phagocytosis. They have no known effect on oxidations in the body. The salts are mostly injurious to phagocytosis, to an extent depending on their toxicity, their ability to effect an exchange of ions with the salts in the cells, and their ability to combine with the opsonins. Those substances which depress phagocytosis *in vitro* have been found, when studied *in vivo*, to have a detrimental effect on the immunity reactions; e. g., the anesthetics, chloral, morphin, some salts and the antiseptics. The substances which have been found to stimulate phagocytosis at all are calcium, magnesium and mercuric chlorids; quinin; colloidal metals; peptone in dilute solution; nucleic acid; a few other leukostimulants such as staphylolysin in weak solution, potassium iodid, and perhaps alcohol; strychnin sulphate and nitrate; sodium iodoxybenzoate; salvarsan and other arsenic compounds; and possibly certain colloidal suspensions of cholesterol. It is interesting that all of these which have been studied *in vivo* have also had a favorable action, namely, salvarsan, calcium chlorid, quinin, colloidal metals (platinum, silver, gold, copper), mercuric chlorid in weak solutions, sodium iodoxybenzoate and cholesterol in colloidal suspension. Hence the action of a chemical substance on phagocytosis *in vitro* is a good index of the effect of that substance when used *in vivo*.

Arkin points out that the effects of an agent on the processes of immunity should be considered carefully when the use of that agent seems indicated in infectious diseases. The possibility of a combined therapy, consisting of the use of immune serums or vaccines together with certain drugs, suggests itself in the case of drugs which have themselves a stimulating effect on phagocytosis. The drugs may act as leukostimulants, or increase the production of antibodies, or combine with the antibodies to render them more active.

39. **Fusiform Bacillus Isolated from Blood-Stream.**—The authors claim that this is the first case on record in which the fusiform bacillus has been isolated from the blood-stream.

41. **Differentiation of Fecal Streptococci.**—From the results of the experiments cited by Fuller and Armstrong it appears that streptococci producing a high acidity in dextrose media are in general characteristic of human excreta. These strains which produce between 3.5 per cent. and 4.0 per cent. acidity in this medium are relatively abundant in human excreta. Dextrose fermenting strains are less abundant in the excreta of the horse and cow, and produce an acidity considerably less than that of the human strains.

Streptococci fermenting mannite are present in human feces in large numbers but are almost entirely lacking in the excreta of the horse and the cow. Strains fermenting dextrose, lactose and mannite (Andrewes and Horder's *S. fecalis*) comprise 65 per cent. of the cultures isolated from human stools, while only 1 per cent. of the strains from the horse and 2 per cent. of those from the cow are of this type. Streptococci fermenting lactose are comparatively rare in horse dung. Streptococci fermenting raffinose are abundant only in cow dung. Sixty-four per cent. of the strains isolated from this source ferment dextrose, lactose and raffinose (Andrewes and Horder's *S. salivarius*), 2 per cent. ferment lactose and raffinose, and 4 per cent. dextrose and raffinose. Streptococci of the salivarious type were not observed in human excreta, and comprised but 4 per cent. of the strains isolated from horse dung.

43. **Properties of Pneumonic Exudate.**—Hartman found that the addition of fatty substances and leukocytic extracts to fibrin does not increase its antigenic power. Leukocytic extracts, leukocyte residues, fatty substances from pneumonic exudates and from leukocytes (pus cells) cause non-specific binding of complement in the presence of some serums regardless of the reaction to the Noguchi test. Some specimens of pneumonic fibrin are themselves hemolytic. Fatty substances from pneumonic lungs and from leukocytes are hemolytic, but not anticomplementary in small quantities.

Normal fibrin and the non-hemolytic pneumonic fibrin, human serum, normal as well as pneumonic, inhibit the hemolysis induced by these fatty substances. The inhibitive power of the serum is contained in the globulin fraction precipitated by carbon dioxid. The four fractions of the fatty substances from pneumonic lungs and from leukocytes simulate those used as syphilitic antigen studied by Noguchi and Bronfenbrenner in their hemolytic, anticomplementary and antigenic powers. The leukocytic extracts vary to a considerable degree in their hemolytic, anticomplementary and antigenic properties. They do not serve as complement. The residues of leukocytes kept in glycerol are hemolytic and the hemolytic principles may be extracted by and demonstrated in alcohol. Extracts of leukocytes from patients with pneumonia are more strongly antigenic than those from pus-cells. The hemolytic substances associated with some pneumonia fibrin can be removed by alcohol, the alcoholic extract proving hemolytic. The anticomplementary power of normal fibrin is greatly increased by the addition of the fatty substances used in the experiments.

## Journal of Pharmacology and Experimental Therapeutics, Baltimore

*November, V, No. 2, pp. 105-213*

45 *Direct Application of Drugs to Temperature Centers. H. G. Barbour and E. S. Wing, New Haven, Conn.
46 *Paradoxical Action of Antipyrin in Partially and Completely Decerebrate Rabbits. H. G. Barbour and C. L. Deming, New Haven, Conn.
47 *Quantitative Studies on Gastro-Intestinal *Absorption of* Drugs. P. J. Hanzlik and R. J. Collins, Cleveland.

45. **Application of Drugs to Temperature Centers.**—The experiments described by Barbour and Wing show that the heat-regulating centers of the brain are directly susceptible to specific neuropharmacologic action. Besides the hyperthermiae which have previously been produced by stimulation of the region of the corpus striatum directly with puncture, electricity, cold and corrosive poisons, analogous stimulation with caffein and betatetrahydronaphtylamin can be demonstrated. Besides direct depression of this region by heat, one may obtain *an analogous depression with chloral, antipyrin, quinin and under certain conditions epinephrin.* Injected into the general circulation the minimal dose of chloral hydrate which causes a distinct temperature decrease is about 20 mg. per kilo animal. The chief factor appears to be muscular rest.

The minimal dose of antipyrin to cause a distinct fall in body temperature is about 60 mg. per kilo. Three hundred mg. is necessary to cause marked respiratory increase. Given into the region of the caudate nucleus (and lateral ventricle), chloral hydrate in doses as small as 6 mg. per kilo or over gives a distinct temperature decrease. Hyperpnea and vaso*dilation seem to be important factors. Antipyrin in doses of 20 mg. per kilo and more gives a definite fall in body temperature* with hyperpnea which appears to be the chief factor. Peripheral vasodilation, if present after this method, is very transitory. Strong alcohol, 25 per cent. or 95 per cent., in the lateral ventricle raises the body temperature as corrosives do. Five per cent. alcohol appears to have the opposite effect. Quinin hydrochlorid injected into the general circulation in doses of about 2 mg. per kilo gave a slow temperature fall of not more than 0.25 degrees. Doses ranging *from* 0 6 *to* 5.5 mg. injected directly into the brain gave *falls of from* 0.6 to 1.1 degrees with either vasodilation or hyperpnea or both. Epinephrin introduced into the brain of rabbits on winter diet always gave a fall in temperature in doses 1.01 and 0.1 mg. per kilo. No external cause was apparent. Caffein in doses of 0.6 to 1.2 mg. per kilo intracerebrally raises the body temperature usually 0.5 degree or more. Vasoconstriction and dilation *of* the pupils are noted, and sometimes signs of marked excitement. *Similar* doses in the general circulation have little or no effect on the body temperature. Betatetrahydronaphtylamin *in the general circulation* caused entirely without symptoms a rise of 0.5 degree within three hours after a dose of 0.02 gram. The same dose in the brain of a somewhat larger rabbit caused in an hour a rise of 1.1 degree with all the characteristic symptoms of this drug followed by convulsions and death.

46. ***Paradoxical Action of Antipyrin.***—Rabbits normally respond to antipyrin, in doses of 0.1 to 1 gm. (sometimes as low as 0.06 gm.) per kilo animal, by a fall in body temperature with marked peripheral vasodilation, and, where the dose is above 0.3 gm., with hyperpnea. Doses in the neighborhood of 1 gm. per kilo may cause fatal convulsions. The *cerebrum and corpus* striatum were removed by Barbour and Deming from eighteen rabbits. In nine of these cases, being those exhibiting as a rule the fewest anatomic complications, a subnormal body temperature (32.5 to 37.5 degrees the morning after *operation*) resulted. The remaining nine animals (besides two of the first mentioned nine, for the first four days after operation) behaved essentially like normal animals. The hypopyrexia animals showed signs of collapse, asymmetrical muscular disturbances, peripheral vasoconstriction and slow respiration. Their temperature condition was not due to cold, starvation or hemorrhage but to a disturbance of central *heat regulation*, probably seated chiefly in the corpus striatum. When given 0.1 to 0.4 gm. (per kilo) antipyrin they showed a definite rise in temperature rather than a fall, and a conspicuous absence of the vasodilation usually seen after the drug, as well as of the hyperpnea which would be expected from the larger doses within this range. Muscle *stiffness* was in evidence, bordering, with the larger doses, *on tonic* and clonic convulsions. Animals completely *decerebrated, including* corpora striata and optic *thalami, gave a* temperature of 26.5 degrees *to* 32.5 *degrees on the morning* after operation. Antipyrin in doses below 0.33 gm. per kilo had no effect on these *animals. Four-tenths* gm. and above always gave a definite temperature rise. Neither vasodilation nor high respiratory rates were seen. Muscle stiffness or tetanic spasms were noted. The authors conclude that the reversed effect of antipyrin on body temperature in these cases is due to the normal heat-producing property of the drug. This property is brought into prominence by operative impairment of the heat-dissipating mechanism as well as of certain normal inhibitory influences which the higher centers exercise over *the processes of heat production.*

47. **Gastro-Intestinal Absorption of Drugs.**—Hanzlik and Collins found that the quantitative absorption of alcohol from the gastro-intestinal tracts of cats and dogs is practically identical. The absorption of alcohol from the stomach and small intestine of cats and dogs is about the same; from the colon *about a fifth higher. The extent of the absorbing area* does not markedly influence the intestinal absorption of alcohol. The absorption of alcohol is scarcely influenced by the *concentration of the alcohol, although a 10 per cent. solution* is absorbed somewhat better than 5, 50 and 95 per cent. solutions. The absorption of alcohol from the intestine of cats and dogs is practically arrested at the end of half an hour after injection. The inhibitory effect is of a local nature, since the presence of alcohol in one loop does not inhibit the absorption from adjoining loops. Under certain conditions inhibition may occur systemically. The intravenous injection of alcohol inhibits its absorption from the intestine. Inhibition of the absorption is not due to *reexcretion.* The percentage absorption of *alcohol remains practically constant* within wide variations of the *systemic blood-pressure.* Changes in the *local circulation influence the intestinal* absorption of alcohol. Injury *to the* intestinal mucosa lessens the absorption of alcohol.

The inhibition of the intestinal absorption of alcohol after intravenous injection *is* due to *a slowing of the circulation* in the intestine; no such change is demonstrable after local application of the alcohol. Such lipoidal substances as olive oil, cholesterin, lecithin, soap, bile salts and bile decreased the absorption of alcohol from the intestine of cats and dogs. The absorption of alcohol from the intestine after death averaged 17.6 per cent; from the stomach 27.1 per cent. Local "narcosis" of the intestine, and changes in the concentration of alcohol are not concerned *in the inhibition of absorption.* The authors conclude that the arrest of absorption is due to a retention or "binding" of a *certain* quantity of alcohol by the intestinal tissues.

## *Medical Record, New York*

*November 29, LXXXIV, No. 22, pp. 967-1012*

48 Freudian Conception of Psychoneuroses. H. W. Frink, New York.
49 Scope and Technic of Psycho-Analysis. C. P. Oberndorf, New York.
50 Middle-Aged Woman. What Can be Done to Increase Her Efficiency? K. C. Mead, Middletown, Conn.
51 *Mechanism of Immunity in Experimental Cancer. I. Levin, New York.
52 Results of Treatment of Syphilis with Salvarsan and Neosalvarsan. S. H. Wadhams and E. C. Hill, U. S. Army.
53 Mortality Experience—Total Abstainers. R. I. Lounsberry, Binghamton, N. Y.
54 Benign Tumors of Female Breast; Report of Case of Adenofibroma. W. E. Hartshorn, New Haven, Conn.

51. **Immunity in Experimental Cancer.**—Levin's studies lead him to believe that Bashford's theory of a *specific* connective-tissue scaffolding has *no* general application in the explanation of cancer immunity. The conditions appear to be quite different when the tumor is inoculated directly into an *organ* instead of subcutaneously. *In this case* the first visible step is not the formation of a connective-*tissue stroma*, but

the inoculated cells immediately begin to proliferate and invade diffusely the normal tissue.

On the other hand, in an immune animal the tumor cells inoculated into an organ do not grow but die and are invaded by an extensive connective-tissue stroma like any other dead foreign body. Consequently, the immune organism does not lack the capacity to form connective-tissue scaffolding, and such an incapacity can no more be considered of a general importance in the elucidation of the phenomenon of immunity in experimental cancer than the lack of specific chemical food. Levin found that the inoculable tumors of the white mice and rats, as a general rule, grow just as well when inoculated into a parenchymatous organ as when inoculated subcutaneously. On the other hand, an animal resistant to a subcutaneous inoculation also resists an inoculation into an organ.

In his experiments with the Flexner-Jobling adenocarcinoma of the white rat, Levin noticed that while the tumor grows when inoculated subcutaneously or into any other organ in a large percentage of animals used, it does not grow when inoculated into a normal testicle. But when a testicle is treated previous to the inoculation either with an emulsion of Scharlach R in oil or an emulsion of ether in water, there takes place in the organ an inflammation accompanied with a proliferation of the intertubular connective-tissue, and then the inoculation of the same tumor into the organ becomes successful. The failure of the growth of the tumor in the normal testicle is not due to a general condition of the organism, but to a local action of the testicle on the tumor cells. The percentage of animals which are generally resistant to a subcutaneous inoculation is very small, and all the animals used for the inoculation into the testicle could not have been resistant to the growth of the tumor. Nor is it due to the mechanical influence of the tunica interfering with the expansion of the organ by the growing tumor, nor to the lack of specific food in the organism of the host. Investigations have shown that other inoculable tumors grow well in the testicle. The mechanism of this local resistance can be due only to an inhibitory action on the cells of this tumor of the cells of the tubules of the testicle. This investigation shows also that it is possible to render the same testicle artificially susceptible to the growth of the tumor.

In another more recent investigation Levin found again a striking proof of the possibility of a certain organ reacting differently toward the growth of an inoculable tumor than the rest of the organism. He repeated Uhlenhuth's experiments with the difference that the second inoculation was done not subcutaneously but into an organ. The results obtained coincided well with the results of Uhlenhuth. He then varied the experiments so that the second inoculation was not done in one organ, but in two organs—liver and spleen—simultaneously. The results obtained were quite unexpected. When the operation was radical and the subcutaneous tumor did not recur, then the secondary inoculation was not successful in any organ. On the other hand, when the operated subcutaneous tumor recurred then in a certain number of cases the secondary inoculation succeeded in both organs; in another series of experiments the secondary inoculation succeeded in one organ and failed in another. All these experiments show conclusively that the phenomena of immunity in experimental cancer cannot be explained by specific food relationship. There must exist a certain as yet unknown kind of an active inhibitory influence of the organism of the host on the cancer cells.

### Missouri State Medical Association Journal, St. Louis

*November, X, No. 5, pp. 155-190*

55 Anxiety Neurosis and Its Treatment. G. W. Robinson, Kansas City.
56 Chemical Factors as Cause of Sterility in Female. G. Gellhorn, St. Louis.
57 Perinephritis. H. Jacobson, St. Louis.
58 Tuberculous Epididymitis with Report of Case with Treatment by Injections of Trypsin. H. M. Young, St. Louis.
59 Some Primitive Facts in Psychiatry. S. A. Johnson, Springfield.
60 Rectal Plug. R. H. Barnes, St. Louis.
61 Clinical Observations in Bacterial Therapy. J. D. Seba, Bland.

### New York State Journal of Medicine, New York

*November, XIII, No. 11, pp. 561-626*

62 Present Obligations of Physicians Regarding Syphilis, Both as to Patients and Public. E. W. Ruggles, Rochester.
63 *Pain and Other Clinical Manifestations of Myocarditis. A. Lambert, New York.
64 Accidental Wounds in Hernia Surgery. W. B. De Garmo, New York.
65 Twenty-Four Cases of Tumor of Bladder and Conclusions as to Appropriate Methods of Treatment. P. M. Pilcher, Brooklyn.
66 Social Pediatrics. I. S. Wile, New York.
67 Human Serum Treatment for Hemorrhagic Diseases of New-Born Infants. J. E. Welch, New York.
68 Some Moot Questions in Medical Education and Students' Ideals. H. L. Elsner, Syracuse.
69 Indications for Labyrinth Operation. F. Whiting, New York.
70 Central Laceration of Perineum. A. G. Swift, Syracuse.
71 Importance of Ophthalmologic Examinations in Immigrants. M. Cohen, New York.
72 Certain Neglected Aspects of Problem of Infant Mortality. P. Van Ingen, New York.
73 *Cardiac and Arterial Decompensation—Prevention and Treatment. L. F. Bishop, New York.
74 Central Scotoma and Blind Spot Anomalies; Their Clinical Significance. P. Fridenberg, New York.
75 Dysmenorrhea. J. H. Carstens, Detroit.

63 and 73. Abstracted in THE JOURNAL, May 10, pp. 1483 and 1484.

### Old Dominion Journal of Medicine and Surgery, Richmond, Va.

*November, XVII, No. 5, pp. 214-252*

76 Reeducation of Disturbed Locomotion. A. Gordon, Philadelphia.
77 Solid Tumors of Submaxillary Gland. A. G. Brenizer, Charlotte, N. C.
78 Warning against Non-Scientific Diet Systems. M. J. Karpas, Washington, D. C.

### Pennsylvania Medical Journal, Athens

*November, XVII, No. 2, pp. 85-168*

79 *Influence of Disease on Civilization. V. C. Vaughan, Ann Arbor, Mich.
80 Relation of Physician to Public Health Problems. J. D. Heard, Pittsburgh.
81 Tuberculosis Crusade. H. R. M. Landis, Philadelphia.
82 *Social Service and Physician, His Obligation and His Opportunity. J. C. Gittings, Philadelphia.
83 Practical Application of Social Service to Dispensary and Hospital Work. F. H. Klaer, Philadelphia.
84 Infant Mortality. C. A. Fife, Philadelphia.
85 *Care of Defectives. J. M. Murdock, Philadelphia.
86 Ludwig's Angina or Submaxillary Cellulitis with Extension to Floor of Mouth and Pharynx. T. T. Thomas, Philadelphia.
87 Treatment of Hernia. J. B. Carnett, Philadelphia.
88 Diagnostic Evidence of Gastric and Duodenal Ulcer as Shown by Roentgen Rays. G. E. Pfahler, Philadelphia.

79. **Influence of Disease on Civilization.**—Vaughan concludes as follows: In the future the training of the medical man must be developed largely with a view to his broader relations to the public. His proper function must be to prevent, rather than cure disease. The physician's duties are to become more and more largely official, in the sense that his services are to be rendered to the community, and not exclusively to the individual. Vaughan is quite sure that the time will come when people will go to the physician to find out whether they are really well or not, and not wait until they know they are ill. They will go for examination and advice, rather than for treatment. Ultimately the time will come when every one will be examined twice, or oftener, each year, and no two consecutive examinations will be made by the same physician. A record will be kept of each examination, and when the individual ultimately dies a careful autopsy will be held in every instance. At first these things will be voluntarily done by intelligent people and, later, others, seeing its advantage will adopt the rule. Finally, it will be compulsory with all, and will result in great good to the whole. The value of a custom of this kind in case of many of the infectious diseases, both to the individual and to the public, is evident.

82. **Social Service Appliea to Dispensary and Hospital Work.**—Social service work in Klaer's opinion has come to stay. It has already regenerated outpatient departments so that this phase of hospital activity will soon take a position equal to that of the ward as a source of study or research, and a much more important place than the ward in the line of preventive medicine. It must, however, always rest on and be closely allied to the medical side of the work, and there must always be the closest cooperation between physicians and

social workers, if both are to work for the best interests of the patient. Accurate diagnosis of medical conditions is absolutely essential to effective social service work. The graduate nurse will find a large field in certain special lines of social service, but even in these lines she must acquire the social service point of view, either by study or experience. In many phases of the work the nurses' training may be regarded as hardly necessary.

Physicians cannot afford to overlook this great auxiliary to hospital or outpatient treatment either in large or small hospitals. It is the department which makes effective the physicians' ideas and instruction and will bring about cures, where, without its help, failure is bound to follow. It will, moreover, be the department through which hospital efficiency may be checked up, and thus set or raise the general standards of this work.

85. **Care of Defectives.**—Sterilization, Murdock says, is at best a partial remedy, as in all probability only those in the scale so low in mentality that the likelihood of parenthood is extremely improbable would be reached. Sterilization is not actually operative in one of the eight states that have passed sterilization laws. Sterilization would not be a safe and effective substitute for permanent segregation and control, and it is to this permanent segregation and control that we must look as the rational policy for controlling feeble-minded.

### Tennessee State Medical Association Journal, Nashville

*November, VI, No. 7, pp. 253-299*

89 Cerebrospinal Meningitis: Symptoms and Diagnosis. A. E. Thayer, Mobile, Ala.
90 Epidemic of Cerebrospinal Meningitis in Institution. T. Weaver, Nashville.
91 *Bacteriology and Pathology of Cerebrospinal Meningitis. W. Litterer, Nashville.
92 Tonsillectomy and Tonsillar Hemorrhage. R. McKinney, Memphis.
93 Surgical Theories of Intestinal Stasis. R. A. Barr, Nashville.

91. Abstracted in The Journal April 19, p. 1249.

### Vermont Medical Monthly, Burlington

*November, XIX, No. 11, pp. 261-286*

94 Progress in Medicine and Public Welfare. J. L. Heffron, Syracuse, N. Y.
95 Pituitrin. E. J. Melville, St. Albans.

## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### Annals of Tropical Medicine and Parasitology, London

*November, VII, No. 3, pp. 359-479*

1 Development of Human Trypanosome in Gut of Stomoxys Nigra. J. W. S. Macfie.
2 Case of Loa Loa. W. Rogers.
3 Recent Experimental Research on Blackwater Fever. J. O. W. Barratt.
4 Fictitious Native Disease (Isigwebedhla). G. A. P. Ross.
5 Vomiting Sickness in Jamaica. H. Seidelin.

### British Journal of Children's Diseases, London

*November, X, No. 119, pp. 481-528*

6 *Diphtheria Bacillus and Scarlatinal Infection. T. S. Higgins.
7 Epidemic of Specific Parotitis in Schoolchildren. A. Graham.
8 *Intestine as Pathway of Infection to Tubercle Bacillus, with Special Reference to Part Played by Diarrhea. L. Findlay.

6. **Scarlatinal Infection.**—The fact that Higgins isolated typical bacillus diphtheriae from the scarlatinally infectious "primary" cases in 25 per cent. of instances, but only in 7 per cent. of those cases of scarlet fever whose return from hospital had not produced return cases, and in 7 per cent. also among normal schoolchildren, he thinks, seems to show that the presence of this germ in the nose or throat of patients with scarlet fever is often associated with a prolongation of the period of scarlatinal infectiousness, and that the presence of the germ is indicative of an increased probability of such infectiousness.

8. **Intestine as Pathway of Infection.**—Findlay found that healthy rabbits can be infected by the ingestion of large amounts of bovine tubercle bacilli. The bacilli can pass through the apparently intact intestinal mucous membrane and reach the mesenteric glands within a period of six days; this, however, does not frequently happen. When infection occurs the intestine is invariably the seat of lesions, and thus tuberculosis of any origin, other than the intestine, is always a secondary infection when the bacilli have entered by the intestinal route. Catarrh of the intestine does not favor the passage of the tubercle bacillus through the wall, but allows of a more constant, and also of an earlier and more widespread infection of the bowel, and in this way facilitates dissemination. Healthy rabbits apparently cannot be infected by the ingestion of large amounts of the human tubercle bacillus. Rabbits just recovered from intestinal catarrh developed tuberculosis after the ingestion of human tubercle bacilli. With the human type of organism a local lesion, though always present, may be slight in comparison with the diseased foci in the mesenteric glands. It would seem that the best means of combating the spread of bovine infection in childhood—until tuberculosis of cattle is eradicated—is in the avoidance of everything likely to cause intestinal catarrh.

### British Medical Journal, London

*November 15, II, No. 2759, pp. 1269-1340*

9 Degeneration of Neuron in Light of Recent Research. F. W. Mott.
10 Relation of Internal Secretions to Female Characteristics and Functions in Health and Disease. W. B. Bell.
11 Epidemic Cervical Adenitis. J. G. Sharp.
12 *Treatment of Gonorrheal Epididymitis by Bier's Method. A. C. Wilson.
13 Dysentery. S. R. Douglas.
14 Diagnosis and Treatment of Epidemic Bacillary Dysentery. J. G. Willmore.
15 Morphology of Intestinal Amebae of Man. C. M. Wenyon.
16 Causes of Invaliding from Tropics. G. B. Price.
17 Some Recent Observations on Sprue. J. Cantlie.
18 Phlebotomus Fever and Dengue. C. Birt.
19 Filariasis. G. C. Low.

12. **Treatment of Gonorrheal Epididymitis.**—In applying passive congestion to a testicle for the treatment of gonorrheal epididymitis, Wilson uses a strip of lint 1½ inches wide, a fine piece of rubber tubing and a pair of Spencer Wells forceps. The cord on the affected side is encircled just above the testicle by the strip of lint, which is continued round between the two testicles along the median raphe of the scrotum. Over the lint is applied the rubber tubing, which is tightened to the required extent and secured by artery forceps. (The required extent being such that no pain results after the application; instead, the patients describe a comfortable warming sensation with immediate relief of pain.) Pain after application implies that the tubing is too tightly applied, and suggests that it should be loosened. A few moments after adjustment the enclosed tissues assume a purple color resembling a ripe plum. The treatment is applied for an hour the first day, where possible, increasing daily up to eight hours. But in some very acute cases half an hour will be all that the patient can stand at first. Where practicable, however, Wilson says it will be found that the duration of disease is in inverse ratio to the length of daily application of treatment.

### Glasgow Medical Journal

*November, LXXX, No. 5, pp. 321-399*

20 Byzantine Medicine: Finlayson Memorial Lecture. T. C. Allbutt.
21 Dilatation of Stomach. A. E. Maylard.
22 Treatment of Hemoptysis in Pulmonary Tuberculosis. J. W. Allan.

### Indian Medical Gazette, Calcutta

*October, XLVIII, No. 10, pp. 377-416*

23 Some Uses of Modified Purin-Free Diet. A. Hooton.
24 Relapsing Fever in Chitral with Account of Successful Animal Inoculations. C. H. Smith and G. F. Graham.
25 Delayed Chloroform Poisoning. D. Munro and A. D. White.
26 Use of Scopolamin-Morphin and Atropin in Preventing Shock during Chloroform Anesthesia. J. J. F. Dunn.
27 Intestinal Obstruction and Scurvy. A. L. Sheppard.
28 Is Syphilis a Factor in Blackwater Fever? A. H. Napier.
29 Some Excisions of Thyroid, Performed at Sree Sree Sree Bir Hospital, Nepal (Khatmundu). S. C. Das Gupta.
30 Case of Myelocythemia. B. Das.
31 Use of Chionanthus Virginiana in Diseases of Liver. F. Roux.
32 Round Worms and Pregnancy. T. G. S. Row.

### Journal of State Medicine, London

*November, XXI, No. 11, pp. 641-704*

33 Lighting in Industrial Occupations. L. Gaster.
34 Sporotrichosis. Gougerot.

35 Salvarsan and Neosalvarsan in Treatment of Syphilis. T. B. Shaw.
36 Cholera Elective Culture Medium. A. Dieudonne and K. Baerthlein.
37 Eye-Strain among Naval Ratings. W. A. Whitelegge.
38 School Planning, with Special Reference to Prevention of Consumption. S. Barwise.
39 Value :of Autoclave in Sterilization of Anhydrous Oily Substances. H. Bullock.

### Lancet, London

*November 15, II, No. 4704, pp. 1367-1440*

40 Degeneration of Neuron in Light of Recent Research. F. W. Mott.
41 Gonorrhea Phylacogen. L. W. Harrison.
42 Small Epidemic of Poliomyelitis. P. B. Roth.
43 Outbreak of Acute Anterior Poliomyelitis at West Kirby. G. Jubb.
44 Two Cases of Ascites Treated by Multiple Paracentesis and by Femoral Drainage. W. G. Nash.
45 *Polyvalent Tuberculin and Types of Temperature Reaction; New Technic. H. Sutherland.
40 Tubal Gestation Continuing to Sixth Month after Rupture at Sixth Week. R. Nairn.
47 *Diagnostic Value of Abderhalden's Method in Carcinoma. R. St. L. Brockman.
48 Five Cases of Porocephaliasis in Man from Southern Nigeria. J. W. S. Macfie and J. E. L. Johnston.

45. **Polyvalent Tuberculin and Types of Temperature Reaction.**—A rise of temperature, even of half a degree Fahrenheit above the mean, occurring within seventy-two hours of an injection of tuberculin, Sutherland maintains, is to be regarded as a reaction. A rise of temperature reaching its maximum within twenty-four hours of an injection is an immediate reaction, and may occur four hours after the injection. A rise of temperature reaching its maximum within forty-eight hours of the injection is a delayed reaction. A rise of temperature reaching its maximum within seventy-two hours of the injection is a progressive reaction. In their order of severity these types of temperature reaction are as follows: (a) immediate reaction with a fall by crisis—increase dose; (b) delayed reaction with a fall by crisis—repeat dose; (c) immediate reaction with a fall by lysis—reduce dose by one-fifth; (d) progressive reaction with a fall by crisis—reduce dose to one-tenth; (e) progressive reaction with a fall by lysis—stop tuberculin.

47. **Abderhalden's Method in Carcinoma.**—There is, in Brockman's opinion, sufficient evidence to show that the blood of persons suffering from carcinoma contains a substance absent in the blood of all others, and that this substance has a proteolytic action on the carcinoma tissue only. There are also several factors which point to its being of the nature of a ferment. If the serum from a patient is left to get stale it becomes inactive, but the addition of a trace of fresh human serum will activate it again. The reaction takes place best at 37 C. At room temperature the reaction does not occur, while heating the serum to 55 C. for five minutes inactivates it beyond recall. If, then, as is maintained, this substance is of a protective nature, it would be natural to expect to find it present in larger quantities in patients who were in good general health. The results of these tests point strongly to such being the case. Brockman has noticed throughout the whole series that a patient with a growth of the tongue or of the breast who is in good general condition will give an intensity of coloration in twelve hours which a patient in a low state of health would fail to give in twenty-four hours.

### Annales de l'Institut Pasteur, Paris

*October, XXVII, No. 10, pp. 797-892*

49 Vaccination with Sensitized Virus against Sheep-Pox. J. Bridré and A. Boquet.
50 Undulant (Malta) Fever in Algiers in 1912. J. Séjournant.
51 Acute Epidemic Poliomyelitis. II. (Etat refractaire et propriétés microbicides du sérum.) C. Kling and C. Levaditi. See editorial p. 1904.
52 Assimilation of Saccharose by Bacteria of the B. Subtilis Group. (Fermentation butylèneglycolique.) M. Lemoigne.
53 Action of Bile on Pneumococci. C. Truche, L. Cotoni and A. Raphael.

### Archives Générales de Chirurgie, Paris

*October, VII, No. 10, pp. 1153-1280*

54 *Pain and the Surgeon. (La douleur en chirurgie.) L. Picqué.
55 Dislocation of the Wrist. (Les luxations dorsales de l'extrémité supérieure des métacarpiens dans leurs articulations avec le carpe.) M. Bergasse and M. Guilmain.
56 Spontaneous Dislocation in Joint Disease. (Les luxations spontanées vraies dans la tuberculose articulaire et dans les arthrites en général.) P. Bertein.

54. **Pain from the Surgical Standpoint.**—Picqué comments on the comparatively slight attention paid to pain by the surgeon, urging that study of the pain is liable to prove a useful guide in various ways. He states that he knows of only one article on pain written by a surgeon in recent years. Richet, the physiologist, to whom a Nobel prize has been awarded, declares that the capacity for feeling pain is more developed in proportion to the development of the mind, and he regards pain as the fundamental element in human progress. Picqué defines pain as generally merely the special perception of some peripheral organic trouble. As a rule, the comparatively insignificant lesions are the ones that induce the severest pains. By comparing the subjective with the objective findings it is possible to determine to what extent the mind participates in causing the pain. Championnière has warned that the surgeon in his examination may create pain for the first time, and that once thus inaugurated, the pain may persist indefinitely. The questions of the physician are liable likewise to call pain into existence or first cause a realization of existing slight pain.

### Archives de Médecine des Enfants, Paris

*November, XVI, No. 11, pp. 801-880*

57 *Uremia in Children. (Signification clinique de l'azotémie chez les enfants.) P. Nobécourt.
58 Radioscopy of Tracheobronchial Lymph-Nodes in Children. D'Oelsnitz and Paschetta.
59 The Intradermal Reaction to Injection of Serum. (La réaction sérique intracutanée.) J. Michiels.

57. **Uremia in Children.**—Nobécourt declares that the pediatrist should apply in his practice the various means of investigation used for adults but he should beware of applying to a child the conclusions drawn from the responses in adults. Uremia, for instance, in older children as with adults, is a consequence of nephritis. But the highest proportions of urea in children in his experience were found with acute and transient nephritis. The prognosis is less favorable when the urea is mild but persisting, this chronic character suggesting a profound and progressive lesion in the kidney. In infants and young children nephritis is less often responsible for the uremia; it appears in acute gastro-intestinal disturbance and bronchopneumonia. High azotemia, unless briefly transient, seems to be the chemical substratum, he says, of athrepsia. The discovery of urea persisting in the cerebrospinal fluid, even in a low percentage, indicates a grave prognosis. Urea up to 0.5, 0.7, 1 or 3 gm. was found in the cerebrospinal fluid of eleven out of eighteen infants with athrepsia; the proportion varied, but the findings were constantly positive till death. Necropsy revealed no signs of tuberculosis or syphilis, while in another series of tuberculous or syphilitic infants, some with pneumonia or digestive trouble, the urea content was constantly normal or below. The athrepsic babies present the uremic syndrome similar to that in adults: gastro-intestinal disturbances, lack of appetite, progressive emaciation and torpor. Uremia in infants may be accompanied by symptoms on the part of the nervous system suggesting meningitis but differing in that the gaze is not so fixed and there is myosis instead of the mydriasis of meningitis. A negative tuberculin reaction also speaks against meningitis.

### Bulletin de l'Académie de Médecine, Paris

*October 14, LXXVII, No. 31, pp. 209-222*

60 *Training the Muscles of the Ear in Treatment of Deafness. (Du traitement de la surdité par la gymnastique auriculaire et les exercises acoustiques.) M. Fernet.

*October 21, No. 32, pp. 223-283*

61 Sexual Perversions a Form of Disease. (Inversion sexuelle et pathologie mental.) P. Ladame and Magnan.

*October 28, No. 33, pp. 284-323*

62 Epileptic Myoclonus. Four Cases. Oddo and Corsy.

60. **Warding Off and Treatment of Deafness by Exercising the Muscles of the Ear.**—Fernet ascribes the benefit from exercising an organ to the consequent improved circulation and better nourishment, enabling it to throw off traces of pre-

ceding disease, and to the better adaptation to its function progressively acquired by practice, but, above all, to the training of the auxiliary organs which sustain and reenforce the lagging organ.

Functional reeducation based on these principles has been successfully applied in treatment of the infirmities in chronic rheumatism and tabes, but the prospects are still more promising in training the hearing in case of encroaching deafness in the elderly or after otitis media. The muscles of the outer ear and middle ear and of the eustachian tube are generally supposed to be beyond the control of the will, but children can frequently voluntarily move the ears and part of the scalp and some become quite expert at it. Fernet thinks that this faculty is lost simply from lack of exercise in adults, but if it can be acquired anew the muscles of the internal ear, which probably share in the movement of the outer muscles, will be effectually exercised. All the above muscles are innervated by the facialis nerve, which explains their concerted action. Even if only one of the above muscles can be exercised, the benefit will extend throughout the whole group of muscles as others contract with it. When only one ear is deaf, the individual generally uses the good ear exclusively, leaving the deaf ear to atrophy and the spark of hearing left soon dies out; if the ear were systematically trained to listen the spark might be kept alive and grow brighter.

The exercises of the muscles may be done in three series, those of the face, then the scalp and auricle, and lastly, those of the eustachian tube. The first series is mainly by grimaces of the face, contracting in turn the muscles of the lips, nostrils, eyelids, doing the exercises slowly and repeating them, aiming to reach the ear. Medical men knowing the anatomy of the parts can train their muscles very effectually in this way; others need a monitor to show them how. With a little training one can learn to move the scalp; especially if it is loosened with a little massage beforehand. The frontal and then the occipital muscles can be contracted alternately, forcing the top of the scalp back and forth, and then the muscles above, behind and in front of the ear. A series of these exercises gives one an unmistakable impression that the depths of the ear are roused from their torpor and that the sound waves have better access. The muscles of the eustachian tube are exercised by a kind of swallowing movement with simultaneous contraction of the muscles of the upper pharynx and velum. A deep inspiration followed by an abrupt expiration through the nose ventilates the tube, and other exercises aid in training the muscles of the tube as they move in concert with adjacent muscles.

The hearing proper should be exercised and trained. Listen with the deaf ear, the ear that hears most defectively; listen the harder with it because it is sliding down into deafness. Fernet's methods have proved very useful in many cases, especially in those in which the trouble in hearing is connected with transmission of sound waves by the middle ear—the most common cause of deafness. Physicians particularly need good hearing, and instead of accepting deafness with the fatalism of the oriental, they should rouse up and fight it.

### Presse Médicale, Paris

*November 5, XXI, No. 90, pp. 897-904*

63 Diagnosis from the Stool of Ulcerations in the Gastro-Intestinal Tract. R. Goiffon.
64 The Antigen in the Wassermann Reaction. A. Desmoulière.

### Revue de Gynécologie, Paris

*XXI, No. 4, pp. 257-352*

65 *Pathologic Anatomy of Tumors in the Breast. A. Gosset and P. Masson.
66 Diffuse Adenoma of the Cornua of the Uterus. J. Caraven and P. Merle.

65. **Mammary Tumors.**—Gosset and Masson state that cystic disease of the breast unquestionably predisposes to cancer. Microscopic examination in cystic disease of the breast may reveal the cancer in its earliest incipiency and thus permit a truly radical cure. Among the seventy-five cases reported and compared, cancer had developed in the in twenty-nine cases of cystic disease of the breast. Only three were found free from cancerous degeneration. The tumor was an epithelioma in fifty-two of the seventy-five cases, including twenty-five with preceding cystic disease, and three with tuberculosis.

### Archiv für klinische Chirurgie, Berlin

*CII, No. 4, pp. 861-1105. Last indexed Dec. 6, p. 2109*

67 *Operations on the Brain. (Zur Gehirnchirurgie.) A. Stieda.
68 *Plastic Operation on the Esophagus. A. Stieda.
69 Experiences with Rosenbach's Tuberculin in Surgical Tuberculosis. R. Lichtenstein.
70 Appendicectomy; 308 Cases. P. Zander.
71 Experiences with Pantopon-Scopolamin General Anesthesia. M. Nentwig.
72 Patent Omphalomesenteric Duct. K. E. Veit.
73 Etiology of Caput Obstipum. K. E. Veit.
74 Tuberculosis of the Bursas in the Hip. (Tuberkulose der Schleimbeutel der Hüftgegend.) J. Becker.
75 *Invagination of the Intestine in Children. J. Becker.
76 Traumatic Dislocation of the Hip Joint in Children. E. Boehnke.
77 Traumatic Central Dislocation of Head of Femur. W. H. Loepp.

67. **Surgery of the Brain.**—Stieda describes in detail the case of a girl of 5 from whose brain a tumor as large as a hen's egg and weighing 125 gm. was removed over a year ago. The symptoms improved remarkably or subsided entirely. This case and several others he reports teach the necessity for operating for brain tumors at two sittings and under local anesthesia, never tamponing or draining; if a plastic operation is necessary, fascia from the thigh is the best material for the purpose. Severe bleeding can be arrested easily and promptly by pressing with scraps of muscle. The case of a young woman is described who has very little disturbances of any kind to show at present, eight years after a partial operation on a glioma in the left central lobe near the center for the arm. As the growth was not circumscribed, it could not be entirely removed; a piece 2x3 cm. was cut out. The tumor has evidently retrogressed during the eight years since to a remarkable extent.

68. **Plastic Operation on the Esophagus.**—The young woman in the case described drank sulphuric acid with suicidal intent, and Stieda gives an illustrated description of the technic with which he later provided her with a new esophagus, made from a skin flap and connected with the stomach by a stout rubber tube, pushed up tight into the lower end of the new esophagus.

75. **Invagination of the Intestine in Children.**—Becker reports twelve cases he has encountered in the last ten years, all chronic but four. In the four acute cases the children were from 5 months to nearly 4 years old and three died. The only child that recovered was the only one treated by rectal injections alone. In the eight chronic cases, that is, with invagination for more than five days, five of the children died. His experience has convinced him that the proliferation of bacteria and production of toxins in the invaginated intestine are what reduces the resisting powers to such a low ebb. The aim in treatment should be to get rid of this source of intoxication as soon as possible, and this is best accomplished, he thinks, by resection of the invaginated portion, followed by entero-anastomosis. The earlier the operation is done the better the results with children over a year old.

### Beiträge zur klinischen Chirurgie, Tübingen

*September, LXXXVI, Nos. 2-3, pp. 265-555*

78 Operative Treatment for Disturbance of Vision with Steeple-Skull. (Grundlagen und Methoden der operativen Behandlung der Sehstörungen beim Turmschädel.) H. Schloffer.
79 Advantages of Ligation of Ileocolic Vein with Mesenteric Pyemia after Appendicitis; Eight Cases. H. Braun.
80 Solitary, Non-Parasitic Cyst in Liver; Thirtieth Case on Record. E. Sonntag.
81 *Stoffel's Operation for Spastic Paralysis. E. Bundschuh.
82 Suture of Stab-Wound of Heart; Two Cases. (Stichverletzung des Herzens durch Herznaht geheilt.) A. Nast-Kolb.
83 *To Avoid Disturbances in Circulation after Ligation of Iliac Artery. (Zirkulationsstörungen an der unteren Extremität nach Unterbindung der Arteria iliaca communis und der Arteria iliaca externa.) F. Strauss.
84 *Spiral Incision in Treatment of Varices or Leg Ulcers. Five Cases. F. Rauch.
85 Roentgen Stereoscopy in Localization of Foreign Bodies. (Lagebestimmung von Fremdkörpern mit Hilfe des Stereo-Röntgenverfahrens.) L. v. Holst.

86 End-to-End Suture of Vessels by Technic that Enlarges the Lumen. (Eine das Lumen der Gefässanastomose erweiternde Methode der Venennaht.) N. Dobrowolskaja.
87 Changes in Blood and Blood-Producing Organs after Amputations and Exarticulations; Experimental Research. W. Schaack.
88 *Thymus and Thyroid in their Reciprocal Relation to Exophthalmic Goiter. (Thymus und Schilddrüse in ihren wechselseitigen Beziehungen zum Morbus Basedowii.) W. Capelle and R. Bayer.

81. **Operation on Peripheral Motor Nerves for Spastic Paralysis.**—Bundschuh has applied in three cases Stoffel's method of weakening the contracted muscle by severing certain of its nerve fibers. The stretch innervated by these fibers ceases to be contracted after they have been divided, and flaccid paralysis of this stretch takes the place of the former contracture. The muscle by this means loses its excessive nervous energy and the normal balance between it and the antagonist muscle is restored. Bundschuh's patients were 3 and 12 years old, with Little's disease or paralysis from early encephalitis. In two of the children the results are highly satisfactory but in the other the triceps surae was evidently not weakened quite enough, and there is still some contracture of the foot which it is proposed to correct later. He emphasizes that the aftercare must be regarded as of equal importance with the operation. Intelligent cooperation on the part of the family is indispensable.

83. **Ligation of Iliac Artery.**—Strauss relates a case in which gangrene developed in the leg after ligation of the external iliac artery under aseptic conditions and with no complications; the artery had required ligating on account of its tearing from traction of adhesions during an operation for inguinal hernia in a man of 70. He says that this occurs so rarely after ligation of the external iliac, in comparison with ligation of the common iliac artery, that the former deserves the preference in all possible cases. The ability to bear ligation without gangrene depends on the functional capacity of the heart, and this should be carefully estimated beforehand. Korotkow's test has proved very useful for this when considering an operation for aneurysm: He compresses the artery above the aneurysm and determines the blood-pressure with the manometer applied below, to the toes, for instance. This permits estimation of the force of the collateral circulation and thus warns of a predisposition to gangrene in case it is found low. If compression is applied above and below the lesion, thus excluding this stretch from the circulation, the blood-pressure at the toes will be approximately what it would be after the stretch of artery had been resected.

84. **Spiral Incision for Varices.**—Rauch says that the results in two of his five cases were most excellent; there has been no recurrence during the years since of the extensive varices and torpid ulcers with elephantiasic changes in the skin. Both these patients had been previously treated by other measures, including operative, but without result, and both had their earning capacity restored in two and a half and three and a half months, by the spiral incision. In the other cases the complete procedure could not be applied and the results were less perfect, but full earning capacity was regained in seven to twelve weeks. The operation is severe and necessarily accompanied by considerable loss of blood so that it is indicated only in the extremely rebellious cases of varicose enlargement of veins. Rauch cites in conclusion the surprisingly favorable results found by Geinitz on a recent reexamination of six patients on whom he had performed the spiral operation nearly two years before.

88. **The Thymus and Thyroid in Their Reciprocal Relation to Exophthalmic Goiter.**—This long article is accompanied by six large charts showing the minute results of the investigations reported, besides five pages of schematic representation of conditions in a number of clinical cases. The data presented seem to show that the thymus and thyroid in exophthalmic goiter work in harmony to a certain extent, but in other points they work against each other. The writers, Capelle and Bayer, were the first to call attention to the possibility that a thymectomy may have as favorable an influence as thyroidectomy in certain cases of exophthalmic goiter. They report a new case of this kind: A woman of 27 developed the symptoms of Basedow's disease in a severe form; palpitations, tremor, diarrhea with vomiting, loss of 24 pounds in three months, the hair falling out, the menses suspended, and the neck growing a very little larger. There was only slight tendency to protrusion of the eyeballs, but they had a peculiar stare. The thyroid showed remarkably slight changes and the severity of the clinical symptoms in comparison with the almost entirely normal aspect of the thyroid suggested that the thymus might be responsible for the syndrome. Roentgenoscopy and palpation rendered a persisting thymus almost certain, and it was removed. Prompt improvement followed; the woman gained 6 pounds in three weeks, menstruation became normal, the pulse dropped from 130 to 95, and the condition now, five months later, may be regarded as practically normal. The thymus was not materially enlarged but showed some hyperplasia of the medulla, less of the cortex, while the content in eosinophil cells was high.

The tables of the metabolic findings in a number of typical cases confirm the assumption that the thymus and thyroid may both be incriminated in Basedow's disease, and that the symptoms vary as one or the other predominates in the production of symptoms. The data presented seem to show that the predominance of symptoms for which the sympathetic nervous system is responsible points to the thyroid as chiefly to blame, while the predominance of vagus symptoms points to the thymus. In dubious cases the simpler operation, thyroidectomy, should be done, but if symptoms persist the thymus should be resected also. In a case with much exophthalmos, much excited heart action, with tendency to fluctuations of temperature and trophic disturbances, the trouble can be referred to the thyroid. On the other hand, in cases with only slight protrusion of the eyeballs, with pronounced subjective heart disturbances but the pulse not altered to correspond, with sweats, diarrhea and dyspepsia dominating the clinical picture, the blood modified according to the Kocher type, and there is an area of dulness over the thymus region and a tendency to myasthenia—this clinical picture incriminates the thymus, and thymectomy should be done first if the thyroid shows no changes proportional to the severity of the Basedow picture. They have operated in three cases on these presumptions, and two of the patients were practically cured; the third died from cardiac paralysis half an hour after the operation. They report further trials of organ therapy, thymus and ovary tissue, but their experiences have been too few for conclusive judgment.

They report further some experiments with injection of epinephrin in Basedow patients to determine whether the sympathetic or vagus nerves were predominantly involved; the findings are compared with those in healthy persons. They gave a subcutaneous injection of 0.001 gm. epinephrin and repeated in half an hour. A response with profuse sweating, palpitation and tremor was always obtained in the severe cases, as also polyuria and glycosuria. When the sweating, polyuria and glycosuria are extremely pronounced, the sympathetic system is mainly involved. The blood changes also under the epinephrin. The condition returns to normal more promptly in the sympathetic system cases; the lack of repair seems to characterize the vagus cases.

## Berliner klinische Wochenschrift

*November 4, L, No. 44, pp. 2025-2072*

89 *Tumors in the Cerebellum. (Erfahrungen bei Operationen von Kleinhirngeschwülsten.) H. Oppenheim and M. Borchardt.
90 *Deformity of Femur after Fracture. (Einige seltene Erkrankungen des oberen Femurdrittels.) G. Axhausen.
91 Experimental Syphilis. (Weitere Mitteilungen über Ergebnisse der experimentellen Syphilisforschung.) P. Uhlenhuth and P. Mulzer.
92 *Exanthematous Typhus. (Fleckfieber.) C. Hegler and S. v. Prowazek.
93 Tube-Casts in Urine. (Cylinder and Cylindroide.) C. Posner.
94 *Determination of Iodin in the Urine. (Nachweis von Jod im Harn.) F. Lesser.
95 Spastic Contracture from Phylogenetic Standpoint. A. Langgaard.
96 *By-Effects of Arsenic and Salvarsan. (Nachtrag zu meinen Arbeiten über die Nebenwirkungen des Salvarsans.) R. Obermiller.

89. **Cerebellum Tumors.**—Oppenheim and Borchardt recently demonstrated a robust young man of 22 in apparently good health, except that vision in one eye is reduced somewhat and when the eyes are shut there is slight staggering. Fifteen months before they had removed a fibrosarcoma from the vermiform process of the cerebellum; it was not circumscribed and considerable portions of the process had to be cut out. The part left was vigorously cauterized. Two previous attempts during the preceding six weeks had had to be interrupted on account of collapse, and after the main operation artificial respiration had to be kept up with brief intervals through the day and next night. The respiration stopped at times completely and then alternated with Cheyne-Stokes with persisting tracheal râles; the pulse kept good. After twenty-four hours the respiration proceeded naturally once more but then the heart repeatedly seemed to be failing. This was successfully combatted with camphor and caffein. The two-hour operation was done under local anesthesia, with a few whiffs of ether at times when the patient complained of discomfort from the position of his head. An equally favorable outcome is reported in the case of a child of 7 who had a tumor the size of a walnut removed from the right hemisphere of the cerebellum. It had already entailed total amaurosis. Eighteen months after the operation the girl is not only in perfect general health but vision has returned so she can count fingers at half a meter. This is the only case of restoration of vision which Oppenheim has encountered.

90. **Acquired Deformity of the Upper Femur.**—Axhausen gives an illustrated description of some cases of tumefaction in the upper femur of various origins. The trouble was a fibrous ostitis in some cases; it was restricted entirely to this one site, and was of several years' standing, up to twenty years in one case. Operative measures seem indicated in such cases and are generally required by a spontaneous fracture sooner or later. The Wassermann will exclude syphilis if there is an unfounded suspicion that the trouble is a syphilitic bone lesion. In another case the trouble in the upper end of the femur in a woman of 71 proved to be a circumscribed focus of severe, pure osteomalacia; no other bones were affected. This is the first instance on record, he thinks, of an extremely severe form of osteomalacia restricted to one bone. In two other cases the large tumor had developed after a fracture but it simulated malignant disease; the patients are both living, several years since the examination. This excludes cancer; the trouble is probably merely excessive callus production at the site of an old fracture; both patients are tabetic.

92. **Exanthematous Typhus.**—Few persons nowadays have had such experience with this disease as Hegler and Prowazek, who studied it in four immigrants at Hamburg and then in hundreds of cases in Servia during the Balkan War. The blood was examined with special care and certain changes were found which are apparently typical; they were never found in the blood of typhoid or measles patients. The disease does not seem to be transmitted by direct contact but all their experiences confirmed transmission by the louse. Inunctions with eucalyptus oil regularly before entering the typhus hospital protected them against the disease, aided by the fact that the patients had all been freed from vermin on entering the hospital.

94. **Simple Test for Iodin in Urine or Saliva.**—Lesser stirs with the end of a match a little calomel into a few drops of the urine on a slide or card. If it contains iodin, the calomel turns bright yellow. Iodin in the saliva is shown up in the same way if the patient spits on a little calomel. This calomel test, he says, is extremely delicate and reliable. Another way to reveal the presence of iodin is by touching the tongue with a silver nitrate stick. The white mark left by the caustic is not white but yellow in case the individual has been taking iodin.

96. **By-Effects of Salvarsan.**—Obermiller ridicules the attempts to explain the mishaps after salvarsan by attributing them to anything except the toxic action of arsenic which salvarsan shares with all other preparations of arsenic.

### Deutsche medizinische Wochenschrift, Berlin

*November 6, XXXIX, No. 45, pp. 2177-2232*

97 Cosmetic Dermatology. III. (Pigmentanomalien: Ephelides, Lentigines, Chloasma, Vitiligo.) E. Kromayer.
98 Early Stage of Atrophic Alopecia. (Pseudopelade Brocq.) W. H. Dreuw.
99 *Hyperemia Treatment of Inflammatory Processes in the Urinary Passages. E. R. W. Frank.
100 Functions of the Prostate. J. Jacobsohn.
101 *Indirect Radiotherapy for Enlarged Prostate. J. Jacobsohn.
102 Calcium and Magnesia in Therapeutics; Experimental Research. M. Kochmann.
103 Pneumonia and Cardiac Defects. O. Keller.
104 Bile Culture Medium for Diphtheria Bacilli. (Erfahrungen mit dem Galle-Diphtherienährboden nach v. Drigalski und Bierast.) F. C. R. Schulz.
105 Treatment of Trachoma. (Zur Behandlung der schweren Körnerkrankheit.) Rau.
106 Blood-Findings in Exanthematous Typhus. (Hämatologische Diagnose des Flecktyphus.) M. Rabinowitsch.
107 Child Labor. (Die hygienische Seite der gewerblichen Kinderarbeit.) W. Hanauer.

99. **Hyperemia in Treatment of Disease in the Urinary Passages.**—Frank refers in particular to inflammation with infiltration, and says that nothing loosens up the tissues and promotes absorption so effectually as the application of local heat. For several years he has been working to perfect appliances to induce local hyperemia, and here gives an illustrated description of a number of them. They are connected with an ordinary electric-light wire with a thermometer to regulate the heat. Patients bear without discomfort a temperature of 55 C. in the urethra, and the catheter can be left in place at this temperature for twenty-five or thirty minutes. The relief of pain is marked, and he states that under all circumstances a warm catheter can be introduced much easier than one at ordinary temperature. He has found that some patients otherwise requiring local anesthesia before the catheter can be introduced readily bear the introduction of a catheter heated to 30 or 40 C., and the dilatation can be carried much farther with heated catheters. He was one of the first to recognize the advantages of Bier's hyperemic treatment for urologic practice, and five years' experience has only confirmed its importance. The appliances described adapt it for various organs, and the pathologic changes retrogress much more rapidly, he declares, more certainly and more completely than is possible otherwise. He adds that Bier's hyperemic treatment registers its finest successes in treatment of chronic inflammatory processes in the urinary and sexual organs, reducing the pain, destroying bacteria or attenuating them, while promoting absorption and resolution and better nourishment of the parts.

101. **Enlargement of the Prostate.**—Jacobsohn argues that the prostate and seminal vesicles are cooperative organs, and he believes that it is possible by influencing the seminal vesicles to act indirectly on the prostate. He sought to accomplish this by radio-active treatment of the seminal vesicles, and reports three cases in detail in which the moderately enlarged prostate subsided enough, in two, to permit practically normal bladder functioning. The prostate materially retrogressed in the other case after ten exposures, but the bladder function is not improved as the disturbances were of many years' standing in a decrepit man of 78. Jacobsohn thinks that this indirect radiotherapy of hypertrophy of the prostate has a promising future and a logical basis in the physiologic connection between the accessory sexual glands.

### Medizinische Klinik, Berlin

*November 2, IX, No. 44, pp. 1793-1836*

108 *Intestinal Auto-Intoxication and Its Treatment. E. Roos.
109 Effect of Papaverin on the Smooth Muscles. (Ueber die Papaverinreaktion der glatten Muskeln, ihre diagnostische und therapeutische Verwertung.) J. Pal.
110 *Importance of the Abderhalden Serodiagnosis for Internal Medicine. J. Bauer.
111 Reaction to Intravenous Injection of Arthigon in Gonococcus Infection. R. Frühwald.
112 *Perforation of Gastric Ulcer Closed by Adjoining Organ. (Zur Frage der gedeckten Magenperforation.) J. Schnitzler.
113 Influence of Age on Development of Cancer. A. Theilhaber.
114 *Radial Paresis from Lead Poisoning. H. Zondek.
115 Advantages of Giving Bromids in Capsules that Pass Through the Stomach Unmodified. (Zweckmässige Form der Bromdarreichung.) P. Jödicke.
116 Sugar Content of Transudates and Exudates. C. Hegler and O. Schumm.

108. **Intestinal Auto-Intoxication.**—Roos regards the toxins produced by bacteria in the intestines as the ones responsible for the symptoms of what we call intestinal auto-intoxication. He says that Strassburger found that a fifth of the dry substance of the stool is often composed of bacteria, and in pathologic conditions without much diarrhea the amount may be more than twice this. Roos used lactic acid bacilli in treatment of rebellious constipation before Metchnikoff published his works on the subject, and he states that the benefit from this has long been known empirically; acid fruits, vegetables or milk containing lactic acid and lactic bacilli have been found particularly wholesome for ages in all parts of the world. Peoples that consume much milk are generally exceptionally robust and long-lived. Milk becomes acid during lactic acid fermentation, while meat under the same condition putrefies; sugar protects organic substances against putrefaction. White cheese has a marked effect in reducing putrefaction in the intestine; Baumann presented evidence that the ethereal sulphates—products of intestinal putrefaction—are materially reduced when white cheese is eaten. Pure casein does not have this property. The white cheese probably takes the milk sugar with it into the lower parts of the bowel. Roos remarks that Metchnikoff's new treatment with the peptolytic glycobacterium, to be taken with considerable potato, forms a new method of treatment which is closely analogous to a dish very popular in Roos' country, namely, boiled potatoes with sour milk-sauce (*gesottene Kartoffeln mit Sauermilch*). Here again, he exclaims, as so often happens, observation and experience, empiricism, have long preceded the scientific explanation of the facts observed.

Abnormal bacterial transformations in the intestines may be combated by regulation of the diet, but it must not be forgotten that the putrefaction may occur not so much in the food particles in the intestine as in the serous fluid poured out from the intestinal walls, which is particularly liable to putrefy easily. Dieting would not affect this; astringents should be given the preference, but the main reliance should be on copious injections, washing out from the bowel the putrefying substances. Diastatic ferments may be useful with fermentation dyspepsia and insufficiency of ferment production. Ordinary sour milk is useful also, but yoghurt is more effectual as the lactic acid bacilli in the latter are more resistant and produce more of the lactic acid. In conclusion he remarks that sourkraut may owe its reputation for wholesomeness to the lactic acid carried with it into the lower bowel; possibly a regular course of sourkraut might be useful in some cases.

110. **Abderhalden's Serodiagnosis in Internal Medicine.**—Bauer reviews the literature on this subject to date, all the evidence tending to confirm the existence of specific ferments, digesting certain organ tissues. At the same time it must not be forgotten that in most cases the ferments are not absolutely specific but tend to be polyvalent. A kind of codigestion (*Mitabbau*) may occur like the coagglutination in serology. It is only a question of time, however, when the technic will be perfected to avoid these group reactions. At present we are only at the beginning of the harvest to be reaped from Abderhalden's method.

112. **Covered Perforation of the Stomach.**—Schnitzler reports two cases recently observed in which the syndrome indicated perforation of a gastric ulcer but then the symptoms subsided and there was recovery in the clinical sense although roentgenoscopy revealed the presence of an unmistable boring ulcer. He warns that operative treatment should never be deferred or omitted in these cases; the perforation is liable to cause serious trouble anew at any moment. Both his patients were young women and in the first case the opening had become plugged by the pancreas.

114. **Radial Paresis from Lead-Poisoning.**—Zondek reports a few typical cases to call attention to the difficulty in flexing the hand backward on the wrist, which he noticed in a few cases as the first sign of lead-poisoning. The grasp of the hand was abnormally weak, but otherwise the condition caused no disturbance. He gives illustrations, and remarks that this radial paresis may prove useful in differentiation.

### Münchener medizinische Wochenschrift

*November 4, LX, No. 44, pp. 2441-2496*

117 *Pressure on the Brain with Certain Eye Affections. II. (Höhe des Hirndruckes bei einigen Augenkrankheiten.) L. Heine.
118 Influence of Altitude on the Blood. (Physiologische Wirkungen des Höhenklimas auf das Blut und ihre Deutung.) K. Bürker.
119 The Spirocheta Pallida in Syphilis of the Central Nervous System. M. Versé.
120 Physical and Biologic Laws of Radio-Activity. (Grundlagen der Strahlenwirkung radioaktiver Substanzen, bes. des Mesothoriums und der Ersatz derselben durch Röntgenstrahlen.) C. Müller.
121 *Abderhalden's Serodiagnosis in Mental Diseases. (Bedeutung des Abderhaldenschen Dialysierverfahrens für die psychiatrische Diagnostik.) B. Beyer.
122 Parasite of Exanthematous Typhus. (Ueber den Flecktyphuserreger.) M. Rabinowitsch.
123 *Diagnosis and Treatment of Non-Tuberculous Disease of the Apex. Litzner.
124 *Operative Treatment of Acute Pancreatitis. A. Hofmann.
125 Movements of Chest Walls during Respiration. (Bewegung des Brustkorbes bei der Atmung.) A. Keil.
126 *Moving Air in Treatment of Granulating Wounds. A. Heisler.
127 Connection of Nervous System with Motor Functioning of the Stomach. G. v. Bergmann.
128 *The Physician and the Tailor. (Die Hohe Schule für Aerzte und Kranke. IX.) M. Nassauer.

117. **The Pressure in the Cerebrospinal Fluid with Eye Disease.**—Heine called attention some time ago to the increase in the pressure of the cerebrospinal fluid as a sign of otherwise latent irritation of the meninges with certain affections of the eye, such as keratitis, herpes of the cornea, etc. He shows by a few examples that a scrap of iron in the eye, contusion or other injury or affection is liable to increase the pressure on the brain, the headache, vertigo and other signs of abnormal pressure keeping up for weeks in some cases. In others there may be no signs of abnormal pressure. His experience confirms the assumption that a psychic element plays a large part in the syndrome.

121. **Abderhalden's Serodiagnosis in Psychiatry.**—Beyer's findings in fourteen cases confirm the possibility of utilizing the specific reactions in differentiating between dementia praecox and other mental affections, and excluding simulation. In the six cases of dementia praecox, testicle or ovary and cortex tissue was digested at every test, while the response was constantly negative in the manic-depressive cases, in simple syphilis, etc.

123. **Non-Tuberculous Disease of the Apex.**—Litzner writes from the Rehburg sanatorium to describe a number of cases in which an apical process had simulated tuberculosis. He shows that a whole series of physiologic and pathologic changes may occur in the apex which have nothing to do with tuberculosis. With a process due to inhalation of dust, the percussion and auscultation findings and possibly coughing up of blood are not as a rule accompanied by fever, and the general health does not suffer so much as with tuberculosis. In one of the cases the influenza bacillus was found constantly in the sputum but never tubercle bacilli, and the tuberculin test was constantly negative. This patient had been under treatment for tuberculosis for nearly a year and during the year since she has had hemorrhage from the lungs, the seventh in the course of eight years, but she has never had fever nor night sweats; no sputum, but occasional cough. Recently there has been some expectoration but the bacteriologic findings are still the same as before: influenza bacilli and no tubercle bacilli. It is important to examine the sputum for fungi. With an infarct in the apex, the sudden onset of symptoms and the usual heart disease point to the correct differentiation; pleurisy may follow if the infarct reaches to the surface. In two cases the trouble was a tumor; there is dulness over a tumor while respiration does not seem to be totally arrested. Echinococcus disease may simulate a tuberculous process, but it can be differentiated by a puncture-fluid free from albumin but with large salt-content.

124. **Acute Pancreatitis.**—Hofmann reports the successful outcome in a case of acute pancreatitis in which he had intended to excise the necrotic portion of the pancreas, but desisted on account of uncontrollable hemorrhage after merely

cutting the gland across after separating the capsule over the anterior aspect of the pancreas. He adds that with acute pancreatitis there is a strip of tenderness running across the abdomen, the pain on pressure being equally acute all along this strip corresponding to the outline of the pancreas, from the epigastrium to the spleen, along the left costal arch.

126. **Hot-Air or Moving-Air in Treatment of Large Wounds.**—Heisler has no apparatus to apply the douche of hot-air which Bergeat extols as particularly useful in promoting the healing of extensive granulating surfaces. To secure a similar action on the wound, he has his patients expose the limb to the stream of air blown from an ordinary electric fan or other ventilator. The current of briskly moving air dries up the wound rapidly and healing proceeds with remarkable promptness. The moving air answers all the purposes apparently of a superheated air-douche; it proved particularly useful in hastening the healing of rebellious leg ulcers and discharging eczema.

128. **The Physician and the Tailor.**—In this ninth instalment of what Nassauer calls "The High-School for Physicians and Patients," he describes a doctor's experience in collecting his bill for delivering a primipara of 40. Delivery had been difficult and tedious, and some lacerations required suturing which he attended to at once. The elderly tissues did not hold the sutures well, and he told the woman to come to him later to have a stitch taken. When his bill was rendered, the husband, a tailor, sent the money for only half the amount of the bill, with a line saying "You overrate your work and you overrate my means. I had to have my wife's laceration sutured by Dr. Elbogen and I deduct the amount of his bill. The workman must pay for any damage he does." The physician wasted no thought on the writer of the note, but he imagined he could hear Dr. Elbogen's words as he repaired the laceration: "A tear of this kind is liable to happen to any one, but I have been very fortunate and have never had any in my practice. Why did not the obstetrician finish his work? perhaps he did not happen to have the necessary instruments with him. But the tear is bad now, and must be attended to at once. Come to the office and we'll have it fixed up in no time." "Elbogen's words were balm to the tailor's sordid soul," Nassauer concludes, "and their two hearts beat as one."

### Therapie der Gegenwart, Berlin

*November, LIV, No. 11, pp. 481-528*

129 *Physical Measures in Treatment of Joint Disease. (Die physikalische Therapie der Gelenkkrankheiten.) P. Lazarus.
130 Experience with B [illegible] Bergmann.
131 *Treatment of Tab[illegible] J. Donath.
132 **Pertussis and Its* [illegible] Ochsenius.

129. **Physical Measures in Treatment of Joint Disease.**—Lazarus discusses the various physical measures that can be applied in treatment of acute and chronic arthritis, and describes the preferable technic. In chronic joint affections external treatment is generally more effectual than internal, contrary to what is observed with acute infectious polyarthritis. He says in conclusion that the results of physical measures often surpass those with drugs, and the general practitioner can apply them with simple procedures if only he will practice the proper technic. Physical measures have another important advantage in that they are applied by the physician himself, and thus more intimate relations develop between the physician and the patient than when he merely gives a prescription to be filled by a druggist. The physical measures should not be restricted to the hospitals and sanatoriums but every physician should master them, especially active and passive hyperemia, massage, massage of the hand in a mercury bath, ionization and radio-active applications.

131. **Medicinal Treatment of Tabes and General Paralysis.**—Donath remarks that the recently acquired knowledge that [illegible] are actual syphilitic processes

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be and generally are aggravated by a kind of Herxheimer reaction, but if the patients are warned of this beforehand and told that the treatment will rouse up the disease, they bear with equanimity the aggravation and in a day or so the symptoms subside and great improvement becomes manifest. In a recent case a tabetic had suffered so long and intensely from gastric crises that an opening had been made into the intestine to permit him to be fed. As the crises still persisted, the Förster operation was contemplated. Donath was then consulted and he gave him neosalvarsan, about 2.55 gm. in four doses in the course of a month. After each infusion a severe gastric crisis followed for several hours but it then subsided, and as the patient could eat he gained rapidly in weight and strength and for nearly three months to date has had no further crises. Another patient with gummatous meningomyelitis, scarcely able to walk, had complete paraplegia develop the day after an intravenous injection of 0.3 gm. neosalvarsan. The paraplegia improved after a few days and by the end of the second week the dose could be repeated and the improvement has been progressive since; the patient can now walk normally. Donath warns that certain patients are unable to bear mercury, and this has to be dropped. He states that he has had no mishap in the more than 3.000 infusions he has made. The untoward by-effects reported in the early days of the salvarsan era were due to lack of care in regard to the smallness of the first doses, strict asepsis, mastery of the technic and exclusion from this treatment of persons with much degenerated important organs. He adds that electricity, hydrotherapy, massage and Frenkel's method of reeducating the muscles are seldom needed when the antisyphilis treatment can be vigorously applied, but they may prove useful when this is impossible.

132. **Whooping-Cough.**—Ochsenius was impressed with the fact that whooping-cough in its early stages presents merely the picture of infection of the upper air passages, pharyngitis with or without coryza. Aiming to prevent the spread of the infection downward, he paints the throat with a 2 per cent. solution of silver nitrate and in eighty-four of the ninety-five children to whom he has applied this measure in a thorough fashion, the effect was most excellent. The caustic action not only prevents secretion of mucus and thus wards off coughing spasms from irritation, but it has a most valuable effect on the child by suggestion. In the few cases in which this treatment seemed to fail, the children were all types of the exudative diathesis. He makes the application on alternate days, for infants every day at first, plus hydrogen dioxid. The result of the treatment was that by the end of the week the number of spasms was about the same but they were much less severe and there was much less secretion, and gradually the spasms became merely an ordinary cough.

### Wiener klinische Wochenschrift, Vienna

*October 30, XXVI, No. 44, pp. 1785-1832*

133 Importance of a Constitutional Predisposition to Morbidity. (Bedeutung konstitutioneller Momente.) J. Bartel.
134 **Operative Treatment of Gastric Ulcer at a Distance from the Pylorus.* A. Brenner.
135 Acidity of the Blood with Osteomalacia. J. Novak and O Porges.
136 *Electric Accidents. (Bedeutung der Art und Intensität elektrischer Starkströme bei Einwirkung auf den Tierkörper.) S. Jellinek.
137 Freezing of Limbs in Military Campaigns. (Erfrierungen im Kriege.) v. Massari and G. Kronenfels.
138 Foreign Bodies in Air Passages; Two Cases. (Zur Fremdkörperextraktion aus den Luftwegen.) E. Paul.
139 Benzol in Leukemia; Two Cases. *A. Krokiewicz.*

134. **Gastro-Enterostomy or Resection for Gastric Ulcer.**—Brenner states that among the 326 gastro-enterostomies done since 1896 in his service, 67 were for a gastric ulcer at some distance from the pylorus. Ten in this group died during or soon after the operation (pneumonia, 3; peritonitis, 2; and the others from heart or kidney disease and one from perforation of the ulcer a week after the operation). In the 50 followed to date 64 per cent. are permanently cured.

tly cured among 18 *surviving*
te has been only 55 per cent.
thus seen to give encouraging

and durable results; on the other hand, resection does not protect against recurrence of the ulcer and against cancer, while the operation makes such demands on the vitality that the immediate mortality in the 25 cases was 28 per cent.

136. **Electric Accidents.**—Jellinek reviews former experimental research by others and some recent work in this line by himself, the conclusions all pointing to the amperage as directly responsible for the effect on respiration and circulation. The voltage and wattage are far subordinate factors in the outcome.

### Zeitschrift für klinische Medizin, Berlin

*LXXVIII, Nos. 3-4, pp. 205-369. Last indexed Sept. 13, p. 909*

140 Oversaturated Solutions of Uric Acid in the Body. (Untersuchungen über die übersättigten Lösungen der Harnsäure und ihrer Salze.) R. Kohler.

141 Biologic Action of Thorium X. V. Salle and A. v. Domarus.

142 The Epinephrin Content of the Adrenals in Thorium X Intoxication. (Zur Frage des Adrenalingehalts der Nebennieren bei Thorium X-Intoxikationen.) V. Salle and E. Apolant.

143 The Blood-Pressure after Injections of Thorium X; Experimental Research. (Blutdruck nach Thorium X-Injektionen.) W. Sudhoff and E. Wild.

144 Disappearance of Uric Acid from the Blood in the Gouty after Treatment with Radio-Active Substances. F. Gudzent.

145 The Share of the Nervous System in the Regulation of the Body Temperature. (Die nervöse Regulierung der Körpertemperatur; Rolle der Nebenniere.) A. Döblin and P. Fleischmann.

146 The Fat-Splitting Ferments in the Blood-Serum. (Fettspaltende Fermente im menschlichen Blutserum, ihre Abhängigkeit von krankhaften, namentlich kachektischen Zuständen, ihre Unabhängigkeit von der histologischen Zusammensetzung des Blutes.) L. Caro.

147 Diabetes Insipidus. C. Socin.

148 *Lessons Learned from Roentgen Examination of 1,200 Stomachs. (Klinische Erfahrungen über die Leistungen, die Grenzen und die Fehlerquellen bei der Röntgendiagnose der geschwürigen und krebsigen Veränderungen des Magens.) L. Schüller.

149 Progressive Dystrophy of the Muscles; Death from Paralysis of the Diaphragm. C. Braunwarth.

148. **Roentgen Examination of the Stomach.**—Schüller writes from the hospital at Düsseldorf that Roentgen examination of the stomach in 1,200 cases has confirmed the great value of this means of investigation in malignant disease, but that it is of little use for diagnosis of gastric ulcer. It shows up an indurated, perforated ulcer, but this type is rare; it also shows the sequels of an ulcer, but to date, he declares, the Roentgen rays have not helped at all in the diagnosis of a recent ulcer and in the overwhelming majority of cases of chronic ulcer. With cancer, however, it instructively supplements the clinical examination and the history of the case. In all his experience the Roentgen findings were never normal in a case with a history of stomach trouble for some time and actual cancer. On the other hand, the trouble never proved to be cancer when with the history of stomach trouble for some time roentgenoscopy showed apparently normal conditions in the stomach. Absolute certainty can be expected only with positive findings, as an incipient cancer may give no sign of its presence. He lays the principal stress on roentgenoscopy, showing the peristalsis and movability of the stomach, viewing it from different points. Roentgenograms are far less instructive. He adds that beginning cancerous degeneration of an old ulcer seldom shows conclusively on Roentgen examination. With this exception, normal findings enable malignant disease to be excluded and the patient reassured. When the ordinary means of investigation are supplemented by roentgenoscopy, we get as complete and accurate an estimate of conditions in the stomach as was attainable formerly only by an exploratory laparotomy. The various points liable to prove misleading are discussed in detail with about a hundred small skiagrams to illustrate the various instructive types encountered in bismuth work.

### Zentralblatt für Chirurgie, Leipsic

*November 8, XL, No. 45, pp. 1737-1768*

150 *Differential Pressure Maintained Through the Nose for General Anesthesia. (Nasale Ueberdrucknarkose.) J. H. Zaaijer.

151 *Liquid Paraffin in Treatment of Wounds; 920 Cases. (Ueber ein erfolgreiches einfaches, im Balkankrieg erprobtes Wundbehandlungsmittel.) J. G. Chrysospathes.

152 Operation for Congenital Diverticulum in the Bladder. Kreuter.

150. **Differential Pressure by Way of the Nose.**—Zaaijer reports from Korteweg's surgical clinic at Leyden a remarkably simple and effectual technic for maintaining positive pressure in the lungs during operations on the esophagus. The large apparatus for differential pressure are complicated and expensive, and the Meltzer-Auer technic for intracheal insufflation is sometimes difficult to realize. He has experimented only on dogs, but he found his method so practical and effectual that he thinks it is applicable for the clinic. A rubber tube was introduced for a few centimeters in each nostril, the size of the tube such that it fits firmly in place. It is easily introduced over a catheter. By connecting these tubes with the oxygen tank and introducing a water safety-valve between the tank and the nostril, the lungs can be kept pumped full of air even with the chest open; the animal continues to breathe tranquilly. Even when the mouth is open, the breathing proceeds tranquilly, only a little more oxygen is required. He thus kept the animal for five minutes in tranquil general anesthesia with free access of air to each side of the chest, with his mouth open and with a catheter introduced into the esophagus. He found in tests on himself and on an anesthetized patient that respiration proceeded practically normally with open mouth. He did not force the positive pressure above 6 cm. water. The pharynx closes up, the intrapharyngeal pressure forcing the soft palate downward and the epiglottis forward. Only intermittently was it possible for air to escape through some narrow slit. He adds that the oxygen-chloroform mixture may be passed through warm water as with the Meltzer technic.

151. **Liquid Paraffin as Dressing for Wounds.**—Chrysospathes found paraffin oil an effectual dressing for sores of all kinds, and reports here that he applied it in treatment of wounds in the Balkan War in 920 cases and the wound healed over in a remarkably short time with a few rare exceptions. Even gaping wounds with exposed bones began to heal at once. The results were even better when he added about 2 per cent. iodoform with particularly severe suppuration. If the gauze sticks, it can be detached by pouring a little more of the oil on it or hydrogen dioxid. He expatiates on the advantages of this simple method of treatment, which does away with all salve and time-stealing procedures. In some of his cases the temperature dropped to normal each time after application of the paraffin, but rose again when the oil was suspended. He has been using this method for some years, having found it so effectual for sterilizing catheters and healing bed-sores.

### Zentralblatt für Gynäkologie, Leipsic

*November 8, XXXVII, No. 45, pp. 1645-1676*

153 *Retrogression of Bladder Changes under Radiotherapy of Cancer of Uterine Cervix. (Rückbildung der Blasenveränderungen bei bestrahlten Collumkarzinomen.) W. Sigwart.

154 *Extraperitoneal Cesarean Section and Pubiotomy. (Extraperitonealer Kaiserschnitt und Beckenspaltung.) W. Weibel.

153. **Radiotherapy of Cancer of the Uterine Cervix.**—Sigwart gives some cystoscope views of the interior of the bladder taken before and after Roentgen treatment of a cancer in the uterine cervix. They show the remarkable retrogression of the bladder changes as the uterine growth subsided under the Roentgen treatment.

154. **Extraperitoneal Cesarean Section and Pubiotomy.**—Weibel states that extraperitoneal cesarean section has been applied in sixty-seven cases during the last five years at Wertheim's clinic at Vienna; during this period pubiotomy has been done thirty-nine times and symphyseotomy not once. In the sixty-seven extraperitoneal cesarean sections, all but two of the children were delivered alive; in one case the mother had become very much asphyxiated during the operation and in the other case the fetal heart sound had grown abnormally weak before any intervention. The mortality in the sixty-seven cases was 3 per cent. and none in the last series of fifty-two women succumbed. One of the thirty-nine women requiring pubiotomy died from thrombophlebitis, twenty-five days after the operation. He thinks that the mortality of 8 per cent. among the children for both opera-

tions is encouragingly low. The 3 per cent. mortality among the mothers occurred while the method was still in its tentative stage.

### Zentralblatt für innere Medizin, Leipsic

*November 8, XXXIV, No. 45, pp. 1121-1144*

155 *Atrophy of Intestinal Mucosa with Pernicious Anemia. R. v. Lippmann.
156 Quantitative Determination of Indican in the Urine. (Harnindikanbestimmung.) D. Natonek.

155. **Atrophy of the Intestinal Mucosa in Pernicious Anemia.**—Lippmann has been investigating the normal relations between the apparent and the real functional capacity of the stomach. He describes the method by which he determined the comparative weight of the musculature and the stomach and the intestine. In a typical case of pernicious anemia he found that the proportion between the mucosa and the musculature in the small intestine was as 100 to 198; for the large intestine as 100 and 403. These findings exclude the assumption that atrophy of the mucosa is a constant accompaniment of pernicious anemia.

### Gazzetta degli Ospedali e delle Cliniche, Milan

*November 2, XXXIV, No. 131, pp. 1367-1382*

157 Plastic Induration of the Penis. F. Cinquemani.

### Policlinico, Rome

*October 26, XX, No. 43, pp. 1545-1584*

158 *Scorbutus in Children. M. Spolverini.
159 Phlegmasia Alba as Complication of Pneumonia. L. Castriota.

*November 2, No. 44, pp. 1585-1620*

160 Myeloid Leukemia with Eye Symptoms. (Caso di leucemia mielogena con una particolare manifestazione oculare.) L. Casolino.
161 Epidemic of Undulant (Malta) Fever in Italy. O. Golini.

158. **Infantile Scorbutus.**—Spolverini reports three cases to show the difficulty of differentiating the true cause for the disturbances in the incomplete forms of scorbutus in infants. There was no swelling of the gums or thickening of the shafts of the long bones in his cases to suggest Barlow's disease; the children merely grew paler and restless, whining and pleading to be taken up and carried, tiring easily, sweating freely, particularly in the head and face. There was nothing characteristic about the symptoms, but the weakness and anemia persisted uninfluenced by ordinary means. There was no spontaneous pain, but the children kept very quiet, with the legs drawn up, to avoid the pain from movements. One of the children was about 2 years, the others 10 or 19 months old. The differentiation in such cases from hip-joint or spinal disease, acute rachitis, neuritis, etc., is by exclusion and by the prompt benefit from change of diet.

### Riforma Medica, Naples

*October 25, XXIX, No. 43, pp. 1177-1204*

162 *Amputation of the Breast. (Sul mio processo di amputazione della mammella per cancro.) I. Tansini.
163 Dilute Acetic Acid Test to Differentiate Effusions and Transudates. M. Barberio.
164 Differential Test-Tube Reactions of Elements of the Blood. (L'azione, in vitro, sul biossido di carbonio, dei polinucleati e dei linfociti, confrontata con quella dell' emoglobina.) M. Ciovini.
165 *Significance of Azurophil Granules in Lymphoid Cells in Infectious Diseases. E. Mondolfo. Commenced in No. 42.
166 *Benzol in Leukemia. C. Quadrone and C. U. Buzzano. Commenced in No. 42..
167 *Stain for Tubercle Bacilli. (Metodo rapidissimo per la colorazione del bacillo tubercolare.) N. Mori.

162. **Amputation of the Breast.**—Tansini's technic for radical removal of cancer of the breast was described in THE JOURNAL, March 23, 1912, p. 899. He thinks it should be given the preference whenever a radical operation is possible as it does away with the possibility of recurrence in the skin, which his experience previously has shown to be a most common type of recurrence. A few months or years after the operation with other technics, a cancer lump appears in the skin, while recurrence in muscle or lymph-node is much less frequent, at least in Italy, he says. Others besides himself have commented on this. Other surgeons regard the skin as of less importance than muscle and lymph-nodes when it is a question of recurrence and they are liable to pay dearly for this confidence in the skin. After Tansini has extensively removed the skin he covers the vast defect left by twisting a large flap around from the back, the farthest possible from the skin near the site of the cancer. His method is thus not essentially a plastic operation, but he has to do an extensive plastic operation to conclude his thorough removal of the cancer and tissues liable to recurrence. His method has the incidental advantage that it does away with the linear scar in the axilla which is liable to shrivel and interfere with the use of the arm.

165. **Azurophil Lymphocytes in Infectious Diseases.**—Mondolfo found granulations taking azure stain in the lymphatic cells in all the infectious diseases studied but not with any degree of constancy or intensity of staining. On the other hand, they proved invariably constant and strongly azurophil in measles—possibly a fact of diagnostic importance.

166. **Benzol in Leukemia.**—In the four cases of leukemia reported, little if any benefit was realized from the benzol.

167. **Improved Stain for Tubercle Bacilli.**—Mori regards the technic he describes as the best yet proposed, not only for its rapid action and reliability, but for the beauty of the results. It is a modification of Ziehl's first method, differing by the formula of the fuchsin stain, and by the fact that all can be used cold, and that no sediment develops on standing. The carbol-fuchsin solution is made with 0.5 gm. fuchsin, 10 c.c. absolute alcohol, 2.5 gm. phenol and 100 c.c. distilled water. The fuchsin is dissolved in the alcohol, the phenol is then added, and then the water is stirred in a little at a time, and the mixture is then set aside for twenty-four hours and then filtered. Differentiation is done with a 1 per cent. solution of sulphuric acid, and the contrast staining with a 1 to 4,000 solution of methylene blue. Each fluid is applied in turn for ten or fifteen minutes, washing in water between.

### Meditsinskoe Obozrienie, Moscow

*LXXX, No. 12, pp. 4-106*

168 Effect of Mother's Illness on Health of Nursing Infant. (Kormlenie bolnimi materiami grudiu svoik dietie.) T. A. Zaetseff.
169 Stenosis of Pylorus in Children; Case of Pylorospasm in Eight-Months' Infant and in Girl of Twelve. P. V. Kuskoff.
170 Interpretation of Palpation Findings at the Appendix. (Palpatsie cherveobraznago otrostka.) M. M. Riezanoff.
171 Sixth Edition of Russian Pharmacopeia. S. I. Chirvinski.
172 Pharmacologic Study of Epinephrin. (Hypernephrinum.) V. A. Smirnoff.

### Hospitalstidende, Copenhagen

*November 5, LVI, No. 45, pp. 1325-1348*

173 *Tuberous Sclerosis of the Brain. (Den tuberøse Hjernesklerose.) O. Keller and H. Scharling. Commenced in No. 44.

173. **Tuberous Sclerosis of the Brain.**—Keller and Scharling report nine cases of this affection with necropsy in four; the other patients are still living. All are idiots and all but two are epileptic and all but two have the characteristic adenoma sebaceum which usually seems to be associated with this congenital disease. Necropsy revealed other tumors in internal organs in some. There was no history of inherited taint except possibly in two cases. Two were not epileptics; only one case is on record with the typical affection not accompanied by epilepsy. It commenced before the child was a year old in all these cases. In the twenty-five cases they have found on record with necropsy, including their own four, a neuropathic predisposition was evident in only 48 per cent.: epilepsy in 88 per cent.; adenoma sebaceum in 64 per cent.; tumors in the kidneys in 76.3 per cent. and in the lateral ventricles in 45 per cent., and tuberous sclerosis in the brain in 100 per cent.

### Nordiskt mediciniskt Arkiv, Stockholm

*XLVI, Internal Medicine, No. 1. Last indexed Sept. 13, p. 910*

174 Shape of the Anterior Surface of the Crystalline Lens. (Form der Linsenfläche im menschlichen Auge.) J. W. Nordenson.
175 Formation of Uric Acid. (Bildung der Harnsäure beim Menschen.) J. P. Chrom.
176 Chemical-Bacteriologic Study of the Air in the Moving-Picture Shows at Stockholm. (Luftundersökningar å Stockholms biografer.) E. Levin.

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# TREATMENT OF PNEUMONIA WITH PARTIALLY AUTOLYZED PNEUMOCOCCI *

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CHICAGO

Rosenow has shown that when virulent pneumococci are suspended in physiologic salt solution the substance or substances on which their resistance to phagocytosis and virulence depend pass into solution.[1] The soluble part or "virulin" at a certain stage of autolysis is highly toxic and has little immunizing action, while the insoluble remnants have well-marked antigenic properties and practically no toxic effects. The soluble toxic part has been found to interfere with the formation of antibodies following injections of the non-toxic insoluble remnants. The protective value against experimental pneumococcus infections of detoxicated pneumococci has been found to be greater than that of heat-killed pneumococci.[2] For these reasons it seemed advisable to determine, if possible, whether or not the injection of virulent pneumococci, from which the readily soluble and toxic parts have been removed, would have any influence on the course and death-rate of lobar pneumonia.

## PREPARATION OF ANTIGENS

The antigens or vaccines used during the winter of 1911, eight in all, were prepared from twenty-four-hour cultures of highly virulent pneumococci grown chiefly in ascites-dextrose broth. The broth was prepared from meat infusion, rendered sugar free, and then 0.2 per cent. dextrose was added and ascites fluid in the proportion of one part in ten. After centrifugation the pneumococci were suspended in 0.5 per cent. phenol in sodium chlorid solution and placed at 37 C. (98.6 F.) for twenty-four hours. This was repeated once or twice, until practically all the organisms had become Gram-negative and eosinophilous. Three of the antigens were prepared in the same way from the washed pneumococci which had grown in the peritoneal cavity of guinea-pigs. The antigens used during 1912 and 1913 were prepared from a large number of strains of highly virulent pneumococci which had grown both in the peritoneal cavity of guinea-pigs and in ascites-dextrose broth. The growth equivalent to that of approximately 150 c.c. of broth was suspended in 30 c.c. sodium chlorid solution at 37 C. under ether. In the case of the antigen used in 1912 the cocci were removed by centrifugation at the end of forty-eight hours and resuspended in sodium chlorid solution under ether. This was repeated twice. The disintegration was then marked and all the cocci had become Gram-negative. The antigen used during the winter of 1913 was prepared by suspending the pneumococci in sodium chlorid solution under ether at 37 C. until 7 c.c. of the suspension were no longer toxic for guinea-pigs when injected intravenously; that is, for about seventy-two hours. The organisms at this time had nearly all become Gram-negative. The sterility of the final product was determined by making both aerobic and anaerobic cultures on blood-agar. Some care must be exercised not to carry the process too far, because then all antigenic powers may be lost; experiments indicate that the best time to interrupt the lysis is when almost all the cocci have lost their affinity for the Gram stain. Standardized suspensions are used from the beginning of the extraction, and the final suspension represents about 20 billion pneumococci per cubic centimeter. This is kept in the ice-chest.

The dose used during the winter of 1911 varied from 10 to 20 billion. The injections were given subcutaneously daily until the temperature reached normal. During the second period, 1912, only one injection of approximately 20 billion was given as soon as the diagnosis was established, while during the past winter from 10 to 15 billion were given daily until the temperature reached normal. Only slight tenderness follows the injection and there is little local and no general reaction noticeable.

## THE TREATMENT OF CASES

The cases treated may be considered in three classes: the cases treated outside of the hospital, the uncontrolled cases in the hospital and those controlled by alternate untreated cases.

The results in the thirty cases occurring in the practice of physicians outside of the hospital were better than those obtained in the more unfavorable cases in the hospital. Of the 30 patients, three died. One of these showed a large number of influenza bacilli in the sputum, together with pneumococci and streptococci; the second patient had a high grade of emphysema, due to a bronchial asthma of long standing, and the third death occurred in an alcoholic aged 58 who had a chronic myocarditis. Injections were begun in the fatal cases on the fifth, second and fifth day, respectively; in the patients who recovered, on the first or second day in seven, on the third day in eight, on the fourth day in five and on the fifth, sixth and seventh days in six; while in four cases the exact time of onset could not be ascertained. The ages ranged from 19 to 58 years. The results as determined by observation at the bedside when the treatment was begun within forty-eight hours of the onset often

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* From the Memorial Institute for Infectious Diseases, Chicago.

[1] Rosenow, E. C.: Human Pneumococcal Opsonin and Antiopsonic Substance in Virulent Pneumococci, Jour. Infect. Dis., 1907, iv, 285; abstr., THE JOURNAL A. M. A., July 6, 1907, p. 87. Tchistovitch and Yourevitch (Ann. de l'Inst. Pasteur, 1908, xxii, 611) made the same discovery.

[2] See preliminary note by Rosenow, E. C.: Autolysis of Pneumococci and the Effect of the Injection of Autolyzed Pneumococci, THE JOURNAL A. M. A., June 11, 1910, p. 1943; Immunization in [illegible], Sept. 7, 1912, p. 795; Mechanism of Intox- [illegible] Anaphylaxis and in Pneumococcus Infec- [illegible] ernat. Cong. Hyg. and Demog., 1912, ii, 338.

seemed striking: there was usually a rise of about a degree in temperature in a few hours, then the temperature would usually drop markedly, to remain one or two degrees lower the following day, and if now the injection was repeated, a normal temperature was often reached in three, four or five days after the onset. When the injections were given in three or four days after the onset the beneficial effect was less evident, while if begun still later there was no apparent improvement. Harmful effects have not been observed in any of the cases.

The second group, consisting of thirty-five cases, occurred in the Cook County Hospital during November and December, 1910. They were treated in the same manner as the cases just mentioned. Nine of these patients died, a death-rate of 25.7 per cent. The injections in the fatal cases were begun on the second day in only one case, on the third day in two, and in the remaining on the fourth, fifth and sixth days. One of these cases was found to be streptococcus pneumonia, in the other pneumonia developed during puerperal sepsis, and one patient had delirium tremens. Three others were bad alcoholics. The treatment in the cases with recovery was begun on the second day in two, on the third in three, on the fourth in three, and on the fifth, sixth, seventh and eighth days in the rest. The ages in this group ranged between 18 and 70 years.

We come now to the consideration of the third and largest group. The good effect of the early injections often seemed convincing, but because pneumonia is so variable in its course some sort of control is desirable. In order to do this most effectively we used the statistical method. Every second pneumonia patient in the order admitted to the Cook County Hospital of Chicago during January, February and March of 1911, 1912 and 1913, the height of each pneumonia season, was injected subcutaneously with detoxicated pneumococci at the same time as he received the usual routine treatment given to all patients with pneumonia, which was not modified in any way whatsoever. There was no selection practiced at all—every second pneumonia patient was injected, the uninjected serving as the control group. We are deeply indebted to the physicians of the hospital for their willing cooperation and encouragement. Altogether there are 294 cases for consideration in this group, 146 receiving the injections and 148 constituting the controls. Of the control group fifty-six died, a death-rate of 37.8 per cent. Of the injected group thirty-four died, a death-rate of 23.3 per cent., a total lowering of the death-rate of 14.5 per cent. in the injected group.

TABLE 1.—DEATH-RATE IN THE TREATED AND UNTREATED PNEUMONIA CASES BY YEARS

| Year | Treated | | | Untreated | | |
|---|---|---|---|---|---|---|
| | Total No. | No. Died | Death-Rate | Total No. | No. Died | Death-Rate |
| 1911 ........ | 51 | 16 | 31% | 50 | 25 | 50% |
| 1912 ........ | 46 | 11 | 24% | 48 | 15 | 31.2% |
| 1913 ........ | 49 | 7 | 14.3% | 50 | 16 | 32% |

Table 1 shows that the mortality-rate was lower in the injected than in the uninjected or control cases during each of the three pneumonia seasons. The unfavorable class of cases that we are dealing with is well illustrated by the very high death-rate of the control cases. It should be said at this time that the death-rate from pneumonia in Cook County Hospital is always very high because most of the pneumonia patients are of the least favorably situated class, hygienically and economically, of the whole adult male population of Chicago, many of them using alcohol excessively.

In Table 2 the death-rate is given by decennial periods. It shows a consistently lower death-rate in the injected cases than in the uninjected cases in each period except between the ages of 61 and 70 years. Here the mortality is slightly higher in the treated cases; but only four were treated with two deaths, whereas in the controls there were eleven cases with five deaths.

TABLE 2.—ANALYSIS OF THE RESULTS BY AGE-PERIODS

| Decennial Periods | Treated | | | Untreated | | |
|---|---|---|---|---|---|---|
| | Total No. | No. Died | Death-Rate | Total No. | No. Died | Death-Rate |
| 1-20 | 21 | 0 | 0 % | 17 | 2 | 11.4 % |
| 21-30 | 39 | 7 | 18 % | 36 | 8 | 22.2 % |
| 31-40 | 43 | 11 | 25.5% | 34 | 14 | 41.1 % |
| 41-50 | 25 | 8 | 32 % | 32 | 14 | 43.7 % |
| 51-60 | 14 | 6 | 42.8% | 18 | 13 | 72 % |
| 61-70 | 4 | 2 | 50 % | 11 | 5 | 45.45% |
| | 146 | 34 | 23.3% | 148 | 56 | 37.8 % |

The incidence of complications and sequelae seems about the same in both groups, and the attack terminated by crisis of those that recovered in 71 per cent. of the injected and in 65 per cent. of the uninjected group. There is a tendency to earlier crisis in the injected group, especially in the cases in which there was a chance to begin the injections early. Thus during 1911 and 1913 when this point was studied, the injections were begun on the first or second day in all but two of the twenty-one cases in which crisis occurred on the sixth day or earlier.

Further analysis of the cases shows that the average age of the injected patients is 34 years while that for the uninjected patients is 36 years. The average age of the injected patients who died is 42.3 years, that of the uninjected patients who died is 42.9.

According to the facts obtained there were seventy-two bad alcoholics in the uninjected group and of these twenty died; there were seventy-three bad alcoholics in the injected group and of these twenty-six died.

The average duration of illness before entrance to the hospital in the control group is 4.3 days; of the control fatal cases 4.4 days; of the injected cases 3.9 days, and of the injected fatal cases 4.3 days. The first injection in nearly all cases was given the day after admission. This makes the average time of the first injection about the fifth day of the disease—necessarily a disadvantage in any form of treatment of pneumonia and particularly for the one under consideration.

### CONCLUSIONS

In view of the fact that the mortality is consistently lower in the injected cases each year, that the average time of the first injection was late (approximately the fifth day), and that the type of cases treated is of the worst kind, nearly one-half of the patients being bad alcoholics, the conclusion that this method of treatment of pneumonia is of value seems warranted.

The results obtained in the series outside of the hospital, in which the injections were begun earlier, indicate that by the early administration of the antigen better results can be secured. Further observations require the cooperation of physicians who are in position to give the injections at the earliest moment.[3]

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[3] *The antigen or vaccine is kept on hand and it will be sent free on application to physicians who are willing to send us records of the cases.*

# ENTERICOID FEVER—FEBRIS ENTERICOIDES *

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During the last few years I have seen a number of cases of continued fever that resembled typhoid fever but did not give the usual laboratory tests nor did they present all of the characteristic clinical features of that disease. In their symptomatology they did not, however, depart from the text-book description more than many well authenticated cases of typhoid fever. I am sure that every physician in active practice sees cases of fever that impress him in the beginning as typhoid, and if he commits himself to this diagnosis he is often much embarrassed to find that the duration is too short for it to be typhoid fever or that the case does not give the laboratory reactions of that disease. I am, of course, not referring to certain widely different infections that may assume a typhoid type, such as ulcerative endocarditis, miliary and caseous tuberculosis, meningitis, etc.

One of these typhoid-like infections has already been established as a clinical entity, namely paratyphoid fever. But it has seemed to me from observation and a perusal of some recent literature that in addition to paratyphoid fever there are other febrile affections that at present are either included under the head of typhoid fever or are as yet "without a local habitation and a name." The recognition of paratyphoid fever has come as a welcome escape from a perplexing dilemma, for it helps to explain a number of otherwise puzzling facts. It explains the occurrence of second attacks of typhoid fever. Most of the literature on this subject antedates the discovery of the paratyphoid bacillus. Inasmuch as typhoid fever does not protect against paratyphoid fever, a person may have the two diseases at different times. The observer not familiar with the facts and not making the differential clinical tests takes it for granted that the two attacks are both typhoid fever. I would, of course, not deny the possibility of typhoid recurrence, but I believe that the newer studies will show its great infrequency. Another disturbing factor for which we now have a fairly satisfactory explanation is the observation that a goodly proportion of persons vaccinated against typhoid fever later developed a typhoid-like infection. Without careful laboratory study the inference would have been drawn that vaccination against typhoid was not as completely protective as its advocates had claimed. But when it is found that the disease attacking the vaccinated persons is not typhoid but paratyphoid fever, then our confidence in vaccination returns, though it is chastened by the thought that its protection is too specific and too limited. Hence we must approve the suggestion of Colonel Firth[1] that vaccination in the future should be done both against typhoid and against paratyphoid fever. I may add, however, that I have seen two cases in which, despite antityphoid vaccination made *secundum artem*, a febrile disease developed three months later which by the ordinary clinical and laboratory tests seemed to be true typhoid. One of the cases[2] ended fatally and at necropsy typhoid ulcers were found.

Through an unusual coincidence I had under observation during the past summer (1912) four cases of continued fever that, while resembling typhoid fever most closely, could not with justice be so designated.

CASE 1.—S. M., a married woman, aged 40, a native of England, residence Telford, Pa., was admitted to the Jewish Hospital on Aug. 17, 1912, complaining of headache from which she had been suffering for three weeks. In the beginning she had had chills for two days and a little nausea. Twelve years before she had had an attack of typhoid fever and had been treated for it in a hospital in Philadelphia. Up to three weeks before admission she had been obtaining her drinking-water from a well on the farm, but changed then to town water because the well-water was beginning to have an offensive odor. Her temperature was somewhat irregular, ranging between 99 and 102 F. with occasional drops to below normal. The fever persisted from her admission on August 17 until September 16, exactly thirty days, and as she had been ill two weeks prior to admission her disease lasted altogether six weeks. Throughout her stay in the hospital the patient made no complaint. She had no diarrhea, no delirium, no rose spots, or palpable spleen. The Widal and diazo reactions were negative. The leukocytes were 5,400; the red cells 4,320,000; the hemoglobin 75 per cent. Recovery was complete.

CASE 2.—G. H., a lawyer, single, aged 41, brother of a physician, entered the Jewish Hospital Sept. 5, 1912, having been ill a week. Nine years previously he had had an attack of typhoid fever lasting three months. Physical examination was entirely negative. There was no enlargement of the spleen, no roseola. The leukocytes numbered 7,400. The Widal test and blood-culture gave negative results. The temperature remained elevated for ten days after admission, reaching 102 F. as its highest. Decline was by lysis.

CASE 3.—M. R., a single woman, aged 57, a seamstress by occupation, was admitted to the Jewish Hospital on Sept. 7, 1912, with a history of having been ill five weeks with fever, diarrhea and occasional vomiting. In July, 1911, she had, according to her statement, an attack of typhoid fever. The house in which she had lived had very bad drainage. Physical examination showed a few doubtful rose spots; the spleen was not demonstrably enlarged; at both pulmonary bases fine crackling râles could be heard. A curious feature was the presence of a pulse of the water-hammer type without any manifest aortic insufficiency. The temperature oscillated considerably, rarely sinking to normal and reaching as its highest point 104 F. It declined gradually and became normal on September 20, exactly two weeks after admission. If these two weeks are added to the five she was ill before coming to the hospital, there is a total duration of seven weeks. The blood showed 5,400 leukocytes. The Widal reaction was negative on September 9 and positive on September 29. The blood-culture was negative and a culture of the feces showed the colon bacillus and a staphylococcus. A culture of the urine was made but unfortunately became contaminated.

CASE 4.—M. J., aged 23, is the wife of a surgeon in the United State Navy. Her medical history is interesting. Wherever she has lived, and she has lived in many places, she seems to have fallen a victim to the indigenous disease. At the age of 8, while residing at Fort Myer, she had an attack of dysentery, another while in Cuba, and a third while in the Philippine Islands. In the last place she also had two attacks of dengue. In January of this year (1912) she received a series of three injections of typhoid vaccine.[3] In July she had an operation for dilatation and curettement. She was taken ill on August 1 with general malaise and headache. On August 8 she got a thorough wetting which was followed by headache and severe pains throughout the body. She entered the university hospital on August 15, with a temperature of 104 F. When I saw her for the first time, she was bright and alert, but preferred to keep her eyes covered with a folded handkerchief. Her face was flushed and around the eyes there was a bright ring of erythema. Heart and lungs presented nothing abnormal. The spleen was not palpable. Over the legs there were numerous crusts, the remains of an eruption of dermatitis herpetiformis, from attacks of which the patient had suffered for many years. There was considerable cough with scanty expectoration, in which some micro-organisms in chains and short encapsulated Gram-negative and also Gram-positive diplococci were found. Tubercle bacilli were not present. The leukocytes were 7,700, with a normal differential count. The urine gave doubtful diazo reaction. The Widal test was negative in the beginning, doubtful on August 19, negative on August 29 and on September 2. On September 2 the patient had two chills a half-hour apart without sweats, headache or nausea. The next day the leukocytes were 16,600. Blood-culture gave negative results and two examinations of the stools for typhoid bacilli were likewise negative, only the *Bacillus pyocyaneus* and the colon bacillus being found. All tests for the paratyphoid organism were also negative. Eighteen days after admission, or nearly five weeks after the beginning of the illness, a few rose-colored spots appeared on the abdomen. The temperature throughout was somewhat irregular—from 101 to 104 F. during the first week, afterward between 99 and 101 F., then again between 101 and 104 F. It reached normal September 14, exactly thirty days after the patient's entrance into the hospital.

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* Read before the Section in Medicine of the College of Physicians of Philadelphia, Oct. 28, 1912.

[1] Firth: Jour. Roy. Army Med. Corps, 1912, No. 19, p. 157.

[2] Since the foregoing was written the organism isolated from the fatal case has been carefully studied by Dr. K. F. Meyer, of the State Livestock Sanitary Board, with the *most* interesting result that, though belonging to the typhoid group, it proved to be neither the ordinary typhoid nor the paratyphoid bacillus.

[3] According to Colonel Firth, Major Russell, Spooner, and others, the antityphoid vaccination protects for at least thirty months.

## REMARKS

I think I can say quite definitely that the disease in these four patients was not typhoid fever, although for want of a better name it was so entered in the hospital records. As to the possibility of its having been paratyphoid fever, there is no clear evidence either one way or the other in the first three, while in the fourth all the known tests for paratyphoid fever proved negative. The etiology thus remains obscure; and so it will remain in many other cases of like nature until we have more accurate diagnostic tests. Progress will be made in this confused field as soon as the fact is recognized that there are organisms allied to the typhoid bacillus that are capable of producing typhoid-like febrile diseases. By means of cultural and serologic tests it is now comparatively easy to separate from typhoid fever a disease formerly confounded with it called paratyphoid fever, but further refinement of our biologic methods will, I am sure, reveal still other types of infection. Even now it is possible to separate paratyphoid fever into two subvarieties, one due to the paratyphoid bacillus A, an organism closely allied to the true typhoid bacillus, and one due to the so-called paratyphoid bacillus B.[4]

The typhoid bacillus is almost exclusively a human parasite. This is also true of the *Bacillus paratyphosus* A. The paratyphoid bacillus B, on the other hand, has a wide distribution in the lower animals, especially in those serving for human food. While generally a harmless saprophyte, it may, like the human colon bacillus, become pathogenic under certain conditions, causing various forms of animal diseases. The meat of such animals may then in turn be harmful to man. I believe that this form of food infection is at the bottom of many obscure cases that at the present time either cannot be classified or are wrongly designated as typhoid fever.

Two principal types of organisms have been found as the cause of food poisoning—the Gärtner type (type of the *Bacillus enteritidis Gärtner*) and the paratyphoid B type. Both of these are represented in nature by many subspecies. They are found in the flesh of diseased animals, but some, especially the paratyphoid B group, also in animals that are apparently well. Moreover, the meat of healthy animals may in the slaughter-house or in the butcher-shop become contaminated through contact with parts of diseased animals. Among the meats used for food, veal seems to be the chief purveyor of infection, but many meat products, poultry—especially goose—fish, lobster, oysters, milk, eggs and cheese may carry the germs.[5]

Much interest attaches to the *Bacillus suipestifer*, a common pathogenic parasite of hogs. It is erroneously called the bacillus of hog cholera; the latter disease is due to an invisible virus with which the bacillus seems always to be closely associated. On account of its ubiquity, the *Bacillus suipestifer* is an important organism, though the exact rôle it plays in human pathology, if it plays any, is still unknown. Morphologically, it is indistinguishable from the paratyphoid bacillus.

Another interesting though little understood point in the epidemiology of this group of infections is the existence of typhoid-like organisms in animals not used for slaughter, such as mice, rats, parrots, canary birds, rabbits and guinea-pigs. Loeffler, in a very fatal epizootic among mice characterized by gastro-enteritis, isolated an organism, the *Bacillus typhi murium*, that is virtually identical with the paratyphoid organism. Nocard, in parrots dying of an epidemic enteritis, found the so-called psittacosis bacillus, which likewise has nearly all the characteristics of the paratyphoid bacillus B. Cases of transmission[6] of the psittacosis bacillus from parrots to human beings have been reported from France and Germany. Another organism not distinguishable from the paratyphoid bacillus was found by Mori in cats dying of acute enteritis. Since animal parasites may easily be conveyed from the lower animals to man, it is not surprising that bacterial infection from one to the other, even when the animals are not used for slaughter, also readily occurs. It is probable that infection is brought about more often through meat and other animal food products than through the medium of domestic pets and rodents. In obscure cases, however, all those possible sources should be taken into consideration.

The symptoms of infection naturally vary widely depending on the virulence of the organism and the susceptibility of the host. Some of the toxins of the paratyphoid group are exceedingly powerful, causing a prompt and violent toxic gastro-enteritis. As they are thermostabile the cooking process does not lessen their toxicity. Many cases of so-called ptomain poisoning and cholera morbus probably have such an origin.

Instead of causing a pronounced local inflammation, the organisms may bring about a general disease in which the local manifestations are but of slight moment. This is the typhoid type of the infection and the one that causes most of the diagnostic difficulties. The disease may last a short time or may be prolonged for weeks. Many and varied are the diagnoses made in protracted cases. Relapses are rarer in paratyphoid forms than in true typhoid fever.

I thought it would be convenient, even though it might not help to clarify the subject, if there were a term to designate all the diseases that resemble but are not true typhoid fever and that are due to micro-organisms of the large paratyphoid family. As the word "typhoid-oid," though expressive is not euphonious, I avail myself of the suggestion made by Dr. H. A. Hare in discussing this paper and propose the name "entericoid" fevers. Up to the present paratyphoid is the best known of the entericoid fevers. In time, as I have intimated, we shall learn to distinguish others—by agglutination and absorption tests,[7] by cultural methods, particularly culture on sugar mediums, and by animal inoculation.

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[4] For unknown reasons the majority of cases of paratyphoid in Germany seem to be due to the paratyphosus B, while in this country and in India the paratyphosus A plays the major rôle.

[5] It may not be amiss to say that sausage-poisoning is due to a wholly different cause, namely, to an anaerobic bacterium—the *Bacillus botulinus*. The symptoms produced by this organism resemble those of atropin-poisoning.

[6] Drewes reports an interesting case in which a woman who had bought a parrot fell ill of a typhoid-like affection. On investigation it was discovered that the saleswoman from whom she had purchased the parrot was a paratyphoid carrier.

The knowledge that there are many other modes of infection aside from those known to convey typhoid fever —that meat and meat products, poultry, eggs, cheese and other articles of food may transmit pathogenic species of the paratyphoid group, and that mice and rats, cats and birds may be carriers of similar organisms, should stimulate us to trace the source of infection in every enigmatic case.

### CONCLUSIONS

1. The term "typhoid fever" as commonly used by physicians includes more than one variety of disease.
2. Only that in which the characteristic serologic and cultural tests for the typhoid bacillus are obtained should be called typhoid fever.
3. To the others, which clinically may resemble typhoid very closely, the term "entericoid fever" may be applied.
4. The entericoid fevers are due to different strains of organisms of the paratyphoid group and to others morphologically similar (Gärtner's *Bacillus enteritidis*, etc.).
5. The source of infection is chiefly food derived from unhealthy animals.
6. Food (including drink) may become contaminated through contact with diseased meat, through rodents, birds, or through the discharges of carriers, etc.
7. So-called second attacks of typhoid fever are probably entericoid (paratyphoid) fever, provided of course the first was genuine typhoid fever.
8. In all cases of typhoid-like character careful search should be made for the source of infection, and blood-cultures and other tests for the determination of the infecting agent.
9. By combined clinical and laboratory investigations it should eventually be possible to distinguish, according to their specific etiology, the various entericoid diseases now grouped together.

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[7] The absorption test was proposed by Castellani and is as follows: If it is intended to determine whether a given specimen of blood-serum contains agglutinins, for example, for the *Bacillus paratyphosus* B, the group agglutinins are first removed by mixing the serum with cultures of the typhoid bacillus, the *Bacillus paratyphosus* A, etc. Any agglutinins of these organisms will be absorbed, leaving that for paratyphosus B intact if it is present. It should be borne in mind that the paratyphoid produces very weak agglutinins, so that a negative Widal reaction for it has less value than in the case of typhoid fever.

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**Individual Health Depends on Community Health.**—The health of the community depends on the health of the citizens, but the health of each individual also depends in some measure, often in large measure, on that of the other members of the community. Health of the individual is therefore a condition that, generally speaking, can be maintained only by a combination of individual and community effort, and its importance is such that in the activities of the city and of the state it should hold a prominent place. The health of the community should be of greater concern than commercial prosperity, for it is essential to commercial prosperity. Necessary as are our courts, our fire and police departments, and our educational systems, the importance of the community's attention to the citizen's health is second to none.—John W. Trask, *Pub. Health Rep.*

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# THE TREATMENT OF HEMOPTYSIS IN PULMONARY TUBERCULOSIS

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Hemoptysis of known pulmonary origin in tuberculosis is now treated at North Reading in a rather original manner. The plan in use was selected for its superiority after three years of gradual elimination of various forms of treatment.

Many methods commonly employed to cope with pulmonary hemorrhage were discarded after a fair trial on account of inefficiency and harmful sequelae. For instance, morphin, generally advocated and no doubt extensively used in the treatment of this complication, has fallen decidedly out of favor with us. The textbooks offer it for use by reason of the indication for the depression of respiratory activity, the allaying of excitement, and the suppression of cough. The idea is that all efforts should cooperate toward quieting the patient, but this seems to be without due regard for the alleviation of the trouble which causes the disturbance. Let one who prescribes morphin in such instances remain at the patient's bedside to observe the annoying symptoms which arise when the initial effect of the hypnotic begins to wear away, and he cannot help being impressed with the ultimately deleterious effect of that drug on the patient suffering from hemorrhage.

Our practice now is to discountenance the use of morphin and opium except in extreme cases, and to substitute therefor a treatment consisting mainly of depletive purgation. This plan seems most effective. Accordingly I feel that some description of its use and rationale merits wider circulation.

### METHOD OF TREATMENT

The patient who begins by coughing to expectorate clear blood from the lungs is immediately placed in a reclining position and is admonished to make no exertion. A curved basin is placed at the side of the face so that the patient may expectorate easily without lifting or turning his head. Any tight-fitting garments are released, but it is not well at this time to try to undress the patient.

Nitroglycerin, in 1/100 grain dose, is given subcutaneously as early as possible after the onset of the hemorrhage. Meanwhile an attendant prepares an ice-bag, also cracked ice to be taken by mouth. The ice-bag is placed at the patient's chest and if pain in any particular locality therein is complained of, the ice-bag is centered at that point. It often occurs that the patient has felt pain and soreness in a definite part of the lungs for some time prior to the hemorrhage, and at this point may be the focus of the bleeding. Hence the advisability of keeping the ice-bag over that spot.

It is well to encourage the patient and to tell him that very few patients ever die from hemoptysis and that by keeping quiet he may escape any serious consequences. A few assuring words from the physician and nurse will go a long way toward quieting the demoralization and panicky fear which many patients experience on the appearance of coughed-up blood. The patient should be told that he can help matters immensely by refraining from unnecessary coughing, by lying quietly, flat on his back without a pillow and by keeping as calm as his excited state of mind will permit.

Assuming that the patient is not suffering from extreme asthenia and is not affected with severe gastroenteritis or any ulceration along the digestive tract, a dose of magnesium sulphate from 1 to 2 ounces is administered within fifteen minutes to one-half hour after the appearance of the hemoptysis. Heroic suggestion and encouragement on the part of the physician are often necessary and is at the same time effective in securing the patient's cooperation both to swallow this medicine and to retain it. At the state sanatorium we have noted few cases in which the patient has lost the dose given, for, realizing his critical situation, he appears anxious to do his utmost to assimilate the salts; these may be more or less disguised by various substances and rendered pleasanter and easier to take.

It might be urged that this treatment is dangerous in that it might have a tendency to encourage nausea and distress, with vomiting and gagging at a most critical period, and hence occasion the release of more blood from the lungs. This has not been our experience and, furthermore, we have seen very few cases in which it might be suspected that retching, following the administration of the salts, was attributable to that cause. The beneficial results of this treatment are seen as soon as the purgative action begins. In about eight out of ten so treated hemorrhages have not recurred after the initial attack. No posthemorrhagic pneumonias ensue such as often complicate cases in which heavy doses of morphin are given and the patient feels brighter and more comfortable, in contrast to the depressing aftereffects of the morphin. Our use of magnesium sulphate depends on two clinical observations as well as other empiric reasons. In the first place, we have noted that many patients having hemorrhage at the time of onset of hemoptysis are suffering from severe constipation. The coincidence of the two conditions is so constant as to warrant the belief that a causative factor is represented, at least in some degree, by the sluggish bowel condition. A popular testimonial as to the genuine value of this tenet is seen in the fact that patients having a tendency toward hemorrhage who have been advised to take exceedingly good care to keep their bowels free are so impressed with the effectiveness of this practice in abating the frequency of the hemorrhages and streaked sputum that they learn enthusiastically to care for this matter themselves.

In the second place, a series of experimental cases was studied with regard to blood-pressure. Whenever it was necessary to relieve a patient's bowels which had not moved for some time, the blood-pressure was taken before relief and after free evacuation of the bowels by magnesium sulphate, when it was found that the blood-pressure dropped anywhere from 5 to 15 mm. (Tycos.). The blood-pressure in many cases in which there was persistent constipation was higher than is usual in tuberculous persons.

Finally we have noted the successful result secured by applying depletive purgation in cases in which hemorrhage occurs and, as in other empirical matters, this reason must be of the greatest importance.

In reviewing the records for one year, and even prior to that time, we have found it noted that a patient afflicted with a profuse pulmonary hemorrhage and treated by the usual method plus a moderate dose of morphin, would often have a recurrence of blood expectoration after the effect of the last dose of morphin was exhausted. With every hypodermic of morphin given the patient's condition would really become more serious, for although hemorrhages might not occur within the next hour or so, it was evident, nevertheless, that the reaction against the aggravated condition was only postponed. It is obvious that the prospect of reaction was intensified by each dose of morphin. Two cases in which the patients were subject to hemoptyses are herein reported and the result of the treatment we have suggested is noted.

## REPORT OF CASES

Case 1.—M. S., a girl, aged 16, formerly employed in a large biscuit factory, was admitted to the sanatorium, May 15, with moderately advanced pulmonary tuberculosis. The sputum was positive for tubercle bacilli on the first examination.

Examination of the chest revealed well-established infiltration of the upper lobe of the left lung with scattered moist râles. There were signs of beginning infiltration in the lower lobe as well as at the right apex. The nasopharynx and larynx showed incipient atrophic change but no bleeding points or ulcerations. The patient was poorly nourished but in fair strength.

The clinical course in this case was uneventful until June 8, when two severe hemoptyses occurred. Each time the regulation treatment given was nitroglycerin, grain 1/100, subcutaneously and application of an ice-bag, followed a few minutes later by a hypodermic of morphin, grain ¼, and atropin, grain 1/100, given to allay undue excitability, which was a marked characteristic of the patient. The bleeding continued and on the second day two larger hemorrhages occurred. There had been almost no evacuation of the bowels for about sixty hours, laxatives having no effect, and enemas producing very poor results. Some relief, however, was soon obtained and it was noted that streaked sputum was subsiding. For the next two weeks bloody sputum was observed daily. Incidentally, the constipation was very obstinate.

June 22 the patient suffered a second series of severe hemoptyses. It was learned that no bowel movement had occurred for forty-eight hours. The first hemorrhage was preceded for about nine hours by a sharp pain in the upper left chest. It should be stated that the intelligence of this patient was exceedingly meager, and therefore the amount of cooperation accorded the nurses and physicians correspondingly small.

The first hemorrhage of this date was at 5:30 a. m., and amounted to 2 ounces. In addition to the routine treatment of nitroglycerin administration, sodium phosphate ½ ounce was given, but without effecting purgation. A hypodermic of morphin and atropin of the usual dosage was also given. At noon a 4-ounce hemorrhage occurred; nitroglycerin 1/100 grain subcutaneously was again given, the application of ice-bags renewed, and morphin ⅛ grain hypodermically administered. One hour later a full dose of magnesium sulphate (1 ounce) was given, with no result. At 3:30 p. m., 5:30 p. m., and 9 p. m., hemorrhages recurred in amounts respectively 15, 6, and 6 ounces.

The pulse was thready and rapid, and as the patient had lost much blood the outlook was quite poor. Although the indications appeared to favor enteroclysis or hypodermoclysis, we determined to try to obtain depletive purgation for empiric reasons.

Accordingly magnesium sulphate, 3 ounces, was given in solution and the patient was encouraged to retain it; in less than an hour large watery movements began, and hemorrhage did not recur.

The following day the sputum was entirely clear of blood and the patient, although weak, was quite comfortable. The following week the patient rallied splendidly, escaping the posthemorrhagic pneumonia which so frequently complicates these situations, particularly when such frequent doses of morphin have been used.

No more hemoptyses occurred to Dec. 21, 1912, when the patient was discharged from the institution as a "quiescent" case.

The other example of this class of cases presents a record essentially the same except that this case was not only of advanced consumption but also of advanced alcoholism, a not infrequent complication.

CASE 2.—A plumber, aged 28, stated that he had first noticed the lung trouble four months prior to admission. He had had no hemorrhages; the sputum was positive for tubercle bacilli and the disease was far advanced in both lungs. He arrived at the hospital in an intoxicated condition and immediately began to oppose every sort of treatment prescribed, objecting to remaining in bed because it made him "nervous," "sicker," and protesting a variety of other alleged ill effects. The temperature ranged from 101 to 103 F., the pulse was rapid, the cough very distressing and marked tremors indicated the need of absolute rest. The patient became more unruly and almost unmanageable in the next few days and refused absolutely to cooperate in any way with those having his case in charge.

Blood soon began to appear in the daily specimens of sputum and as the patient was constipated, full doses of salts were ordered. The patient refused all medication. Hemorrhage precautions were ordered on November 1, but the patient was soon found walking about the ward, violating all orders and advice given for the prevention of hemoptysis.

November 2 a hemorrhage of 16 ounces occurred at noon; the patient refused to allow the nurse to give nitroglycerin subcutaneously and threw the ice-bag on the floor. There was a smaller recurrence of hemorrhage throughout the day and that night. November 3 a hemorrhage of 12 ounces occurred at 7:45 a. m., and blood was expectorated at intervals through the morning. The patient lost much blood and became quite weak and badly frightened. He was put on the danger list. He told the nurse and physician then that he would take anything. Two large doses of magnesium sulphate were given which effected the passage of several watery stools. There were no further hemorrhages and streaking in sputum subsided; the latter continued in slight amount, however, for six days. Active catharsis was kept up daily. The patient's hostile attitude changed to a better frame of mind. He is at present in the hospital, but has had no recurrence of hemorrhages.

The after-treatment, once the blood stops coming in any amount, is a matter of keeping the patient at rest, providing some liquid non-irritating nourishment and keeping the bowels clear. For at least twelve hours I keep the patient flat on the back without a pillow and insist on the use of the bedpan. The ice-bag is kept at the chest from two to three hours only and at the same time the rest of the body is kept as warm and as free from cramp as is consistent with absolute rest. It is perhaps better to remove the ice-bag from the chest early, and to replace it at intervals should necessity indicate. Much harm can be done by prolonging the application of cold to the thorax, for there comes a time when its contractile effect on the pulmonary blood-vessels is succeeded by a paralytic relaxation with ensuing trouble.

The tendency is to continue the ice-bag indefinitely, especially when it is left to the nurse, who regulates a matter of good treatment quantitatively. As long as the thorax is kept cold a warm water-bottle may be applied to the patient's stomach or feet, usually with considerable relief. The patient should be encouraged to look on the matter as cheerfully as possible, and a few hopeful words will often do a great deal toward dissipating worry and in adding to the patient's comfort. For medicine, sodium nitrate, 1 grain, may be given every three hours, with the hope that the blood-pressure will be reduced. This sometimes causes severe headache and its use is then discontinued. Empirically there seems to be no great benefit following its administration and its use is, therefore, only in accordance with the indication of a need to lower the blood-pressure.

Calcium sulphid in 1/6 grain tablets to the extent of three to six tablets three times daily are much in favor with us for the reason that it seems to cause the colored sputum to clarify more quickly, the supposition being that this drug renders the blood more coagulable. The hypothesis is apparently borne out and substantiated to some extent in practice.

If cough is very severe, codein by mouth in small doses will do much toward quieting the patient. I prefer to use this drug rather than heroin or morphin.

For nourishment the patient should receive 4 ounces of cold milk to which may be added a scant teaspoonful of lime-water every three hours. If the hemorrhage has occurred in the daytime, in the night I like to give the patient liquid nourishment, neither hot nor very warm, but with the chill taken off to relieve the empty stomach and to provide sustenance. If the sputum becomes clear within eighteen hours, semisolid nourishment in the form of dropped eggs may be given. I think it best not to starve the patient more than is necessary, for it seems better to provide means of nutriment which fulfils two purposes. Not only does it give the patient the means of making up the blood loss which has been sustained, but it also quiets and soothes the stomach, causes greater equilibrium of the circulation, more blood being centered in the splanchnic region and less about the affected pulmonary focus.

It is perhaps unnecessary to advise that visitors should not be permitted and that all causes of worry and excitement should be forbidden. The condition of a hemorrhage in a patient in this institution was aggravated and recurrence of hemorrhage stimulated by a domestic factional dispute carried to his bedside and waged there relentlessly at every opportunity which could be obtained until all his visitors were barred, whereupon the patient began to recover.

Formerly our hemorrhage patient, to whom morphin and atropin was administered in full doses, suffered a run of high temperature for a number of days following the hemoptysis. Sharply contrasted with this happening is the normal temperature and pulse of the patient treated by the latter plan. With the gastro-intestinal tract clogged and of little use in carrying off the accumulated toxic material in the bowels it is not surprising that the former condition of high fever, a manifestation of increased toxemia, should obtain. But with a clear and actively functioning bowel the amount and effect of toxemia is reduced to a minimum. Furthermore, the patient is ready to assimilate nourishment as soon as feeding can be safely resumed. Thus double advantage is gained, for, instead of increased wasting, there is quick resumption of an almost normal assimilation, and the relapse occasioned by the period of hemoptysis is of much smaller proportion. The loss of weight, in this latter case, may amount only to a few pounds, whereas formerly a loss of 10 or 12 pounds would occur and the loss sometimes be sufficient to handicap the patient beyond all hope of recovery.

The bedpan may be discontinued on the third or fourth day after the attack, but the patient is not to be allowed up any length of time for at least seven days after the clearing of all color from the sputum. While the patient remains in bed active massage of the lower extremities and body should be prescribed in the form of rubs with liniments, preferably oily camphor preparations, in order to make the patient comfortable and to assist maintaining an equilibrium of the circulation.

I have used preparations of suprarenal extract a sufficient number of times to disclose any material value it might have therapeutically in treating hemoptysis, but nothing has appeared to influence us in its favor. Instead of depending on the physiologic action of the various drugs recommended in treating hemoptysis we prefer the far more certain mechanical effect of depletive purgation.

Only two hemorrhage patients were treated by the production of artificial pneumothorax, and in both instances success was attained. The uncertainty as to which section of the lungs is producing the blood, unless the hemoptysis is strictly unilateral, warns against this practice for obvious reasons.

Constricting the lower limbs with a tourniquet, one at a time, and thus restricting the confines of the circulation, was formerly attempted when the amount of bleeding became dangerously large, but was without extraordinary result.

With the exception of occasional allusions to textbooks I have purposely refrained from citing the literature, in which there is a considerable accumulation of matter on this subject. I have not chosen to compose a critical discourse, but only to state the method of treatment of hemoptysis evolved by observation and practice in a clinic of fifteen hundred patients at the North Reading State Sanatorium.

# SHIP-BORNE CHOLERA

## THE SEA AS A FACTOR IN THE TRANSMISSION OF ASIATIC CHOLERA

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The seasonal advance of Asiatic cholera from East to West, over mountains and continents, has long been known to follow the paths of human travel and commerce. In the past century many wide-spread epidemics of the disease have embraced the entire continent, but since 1873 it has never prevailed to any extent in this country, although ship-borne cases have occurred from time to time at the various quarantine stations. It may be interesting to record a recent passing of the quarantine line by the disease, in a port separated by a sailing distance of 4,000 miles of ocean from the infected point of departure, and after a direct voyage averaging between ten and sixteen days at sea. The port of New York occupies this position with regard to the Mediterranean and eastern European ports, into which the stream of emigration is easily the largest of any port in the United States and also in the world. The volume of this traffic may be judged by the number of emigrants medically examined at quarantine,[1] which for the year ending 1911 was 533,485 and for 1912, 676,660. The nationality of the greater part of this large army is Italian, Greek, Turkish, Polish, Hungarian and Russian, with a certain number of persons from Asia Minor and the far eastern European lands. The existence of cholera in Italy, Russia and Turkey in Asia, had been noted with the onset of the summer season of 1911. Two deaths from cholera had been reported from Reggio di Calabria, Italy, on June 8, and in June 14 two more cases had occurred at Serrastretta and one at Lungro. The number of cases subsequently reported, however, did not indicate the presence of any extensive epidemic in Europe to warrant the taking of any special preventive measures by the health authorities on this side. The possibility of a cholera invasion of New York City appeared to be remote. The careful routine examination of passengers at foreign ports of departure, with an observation period of five days before sailing, and subsequently the disinfection of baggage and destruction of all foodstuffs carried by emigrants, was considered with reason to be a reliable control on ship-borne cases of the disease, which, with the long period for observation at sea, would seem to constitute a natural barrier against infection. In the following months of June, July and August, a continuous succession of cholera-infested ships arrived at quarantine, New York, and among the detained passengers many cholera carriers were found. It was thus shown that even with the strictest precaution against infection at ports of departure, the distance from an infected locality is no safe-guard against sea-borne cases of cholera. The potential infective ability of the healthy bacillus-carrier also has to be seriously regarded by quarantine authorities. On June 13, 1911, the S. S. *Berlin* arrived in New York and reported the death, with cholera symptoms, of a steerage passenger thirty hours after leaving Naples. Discharges from this passenger preserved until arrival were bacteriologically diagnosed as cholera. The following day, June 14, the S. S. *Europa* from Naples reported one steerage passenger sick with cholera symptoms. On his removal to the Quarantine Isolation Hospital, the disease from which he was suffering was confirmed bacteriologically as cholera. The discharges preserved from another passenger who was ill during the voyage were also confirmed as cholera.

On June 20 the S. S. *Duca degli Abruzzi* from Genoa and Naples reported three cases of cholera-like sickness among the passengers and crew; one of these patients died on arrival at quarantine and one member of the crew died while being conveyed to the quarantine hospital. These two cases were both diagnosed bacteriologically as cholera. A few days later two further cases of cholera developed among the detained passengers from this ship. After five days' detention for observation at quarantine, and one day in Ellis Island, the passengers were released. Four days later, June 30, one of these, an Italian boy aged 17, after proceeding to Auburn, N. Y., was taken sick with cholera-like symptoms, and died on July 1. Cholera was not diagnosed bacteriologically. Another passenger from the same ship, an Italian woman aged 33, sickened in Brooklyn, N. Y., on June 30 with suspicious cholera. She was returned to the quarantine hospital where she died on July 4. Cholera was diagnosed bacteriologically. These two cases were remarkable for the length of time between the known exposure to infection and the development of the disease, it being longer than the usually acknowledged incubation period for cholera. The probable explanation of this occurrence was perhaps an infection immediately before release from quarantine, by an undetected cholera carrier among the detained passengers from the infected ship.

On June 21 a passenger who had suffered from suspicious cholera symptoms was reported on the S. S. *Laura*, which sailed from Patras, Greece, on June 5, calling at the cholera-infected port of Palermo on June 7, where passengers were embarked. No cholera had been reported from Greece at that time and the voyage occupied sixteen days from Palermo. It was not remarkable that two cholera carriers were isolated at quarantine from the passengers who had been in intimate contact with the case on board ship. The immediate result of the development of cholera cases among released emigrants on shore was the issue by the Treasury Department Circular 45, 1911, requiring that the observation period of passengers detained from infected ships be extended to ten days at quarantine, unless after five days' observation bacteriologic examination should show them free from the cholera vibrio. Each case on confirmatory bacteriologic diagnosis was transferred to the Swinburne Island Quarantine Hospital for treatment.

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[1] Annual Report of the Health Officer of the Port of New

At this time two further cases of cholera had been reported on shore. One, a Spanish sailor, who had arrived in New York on July 2 on the S. S. *Teodoro de Larrinaga,* and after being ashore for fifteen days was suddenly taken ill on the street with severe intestinal symptoms and collapse. Cholera was diagnosed at the Bellevue Hospital, to which he was conveyed, and from which he was removed to Swinburne Quarantine Hospital, cholera being bacteriologically confirmed. This case is remarkable in that there was no cholera reported by the ship on which he traveled, which had come from South America by a round-about route, including a call at Boston before coming to New York. The voyage occupied forty days, and no cholera had been reported from South America. If the infection had taken place on board ship, the incubation period was fifteen days before clinical symptoms became urgent enough to demand hospital treatment. Even if he were a cholera carrier developing an acute attack the initial infection remains a mystery. On July 5 the S. S. *Moltke* arrived from Italian ports with one case of cholera among the crew. The passengers were transferred to Hoffman Island for observation, where eleven further cases developed, making twelve cases of cholera from this ship, and nineteen cholera carriers were found among the detained passengers and crew.

A watchman who had been employed by the quarantine department to guard detained passengers on Hoffman Island, while visiting relatives on July 13, was suddenly seized with intestinal colic. He was transferred to Swinburne Island, where he died two days later; the bacteriologic diagnosis was cholera. This man had been in intimate contact with healthy passengers only, who had been exposed to cholera infection, and the presumption is that he was infected by a cholera carrier.

The S. S. *Perugia,* on arrival on July 15, reported two cases of illness on board at sea, among the passengers and crew. The cases now convalescent were bacteriologically confirmed as cholera.

With the arrival of the S. S. *Venezia* on August 11 from Naples and Palermo a suspected cholera case was reported among the crew. The patient had sickened on August 3, but was well on arrival. Bacteriologic diagnosis was negative for cholera. A passenger had also become sick at sea on August 7 and had died on the following day with cholera-like symptoms. On arrival, specimens from this case were positive for cholera. One cholera carrier was found among the detained passengers. The S. S. *König Albert* reported, on arrival, two sailors sick with cholera symptoms during the voyage from Naples and Palermo. On arrival one of these cases was confirmed bacteriologically as cholera. Two cholera carriers were found among the crew; after routine examination the remainder of the passengers were negative for bacillus carriers.

Three deaths, in children who had clinical symptoms of cholera, during the voyage from Italian ports were reported on August 18, by the S. S. *Re d' Italia.* The discharge preserved from these children, after bacteriologic examination, showed one of these deaths as being due to cholera. One member of the crew and a passenger were sick on arrival in New York, the former case being confirmed as cholera, and one cholera carrier was detected among the passengers in detention. With the arrival of the S. S. *Europa* on August 25, reporting a death from supposed cholera at sea, which was confirmed bacteriologically, the last of the cholera-infected ships were reported at quarantine.

### SUMMARY OF CHOLERA CASES AT NEW YORK, JUNE 14 TO AUGUST 18, 1911

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|---|---|
| Fatal cases of cholera occurring at sea | 6 |
| Cases of cholera occurring at sea, patient arriving well | 4 |
| Cases of cholera occurring at sea, patient arriving sick | 6 |
| Cases developing at quarantine after arrival | 15 |
| Cases occurring among released ship's passengers and crew | 3 |
| Cases among quarantine employees | 1 |
| Cholera-bacillus carriers detected at quarantine | 31 |

### SPECIAL MEASURES TAKEN BY THE HEALTH AUTHORITIES

In consequence of the continual arrival of cholera-infected ships in the port of New York, special measures were instituted by the federal and state health authorities, including the issue on July 16, by the U. S. Treasury Department, of Circular 47, requiring the detention of all steerage passengers from cholera-infected ports until bacteriologic examination had proved them not to be cholera carriers. To insure the proper carrying out of the routine examination necessitated by this order the quarantine laboratory staff was reenforced by trained assistants from the state laboratory at Albany and from the U. S. Public Health Service at Washington. The steamship owners were urged that they advise their agents abroad not to accept immigrants from infected localities, in order to prevent congestion at New York quarantine. State and local authorities were asked to exercise special superveillance over newly-arrived emigrant laborers, and in the event of the occurrence of a case of acute gastro-enteritis or diarrhea to notify the State Board of Health without delay. Expert aid was offered by the federal authorities to any local health board requiring aid for the diagnosis of suspicious illness or for the inauguration of special preventive measures.

### THE ROUTINE EXAMINATION FOR CHOLERA CARRIERS

The compulsory bacteriologic examination of all passengers from cholera-infected ports made necessary by the treasury order of July 16, 1911, required the taking of rectal swabs from every steerage passenger, as well as from the members of the crew. With practice the routine procedure became most expeditious, so that a thousand or more emigrants could easily be handled in one day. In the beginning, swabs from the rectum were deposited in sterile tubes, which were conveyed to the laboratory and there inoculated into Dunham's peptone solution. To save time and facilitate the procedure enough tubes of Dunham's medium were conveyed on board the steamship in wire baskets, holding one hundred each. The swabs, similar to those used for diphtheria work, were sterilized in paper bundles of fifty or one hundred. The passengers were first separated, the women and children being handled by a staff of women doctors and nurses. Each passenger with his name card was rapidly passed before the doctors in a convenient room such as the dispensary or ship's hospital. The swab was moistened in peptone water and inserted well above the anal sphincter. It was found best to obtain a well fecal-stained specimen, which was dropped into a peptone tube and numbered to correspond with the number on the identification card.

On completion of the procedure the peptone cultures were conveyed ashore and incubated for six hours at 37 C. (98.6 F.). Subcultures were then made in fresh peptone water and incubated for from nine to ten hours. Smears from the subcultures were stained with dilute carbolfuchsin (1:7) and examined microscopically. Any vibrio found was examined for motility and plates of alkaline agar made (3/10 to 5/10 alkaline to phenolphthalein). After incubation for from twelve to twenty-four hours the plates were examined, and any suspicious organisms present were tested for agglutination against an anticholera serum of high titer. For the purpose of simplifying the procedure of vibrio detection an attempt was made to utilize the known fermentative action of vibrios on saccharose for diagnostic purposes. An alkaline saccharose-peptone water was employed containing phenolphthalein as an indicator, the presence of sugar-fermenting vibrios being shown by the decolorizing of the medium. By the procedure good results were obtained in the limited time the special medium was used.[2]

A passenger found harboring the cholera vibrio was immediately isolated to Swinburne Island Hospital, where he was treated as a cholera patient. On a negative bacteriologic finding all passengers were discharged from detention. During the four months of routine examination for cholera carriers, 26,678 passengers were bacteriologically examined at quarantine, the number for each month being: July, 1,777; August, 5,105; September, 5,700; October, 9,389; November, 5,807.

### THE CHOLERA VIBRIO

The peptone water for enrichment, and similarly the Liebig beef-agar medium for plates were employed, with an alkaline reaction to phenolphthalein of from 0.3 to 0.5 per cent., and this was found to be the most favorable reaction for the growth of the cholera vibrio. The cholera red was not obtained to any degree in peptone cultures containing a mixed intestinal flora, it was, however, fairly consistently present in pure cultures.

The colonies of the cholera vibrio in pure culture on alkaline agar plates, although readily distinguishable from those of other intestinal bacteria, were not so easily differentiated from the cholera-like vibrios. After twenty-four hours' incubation the growth was seen flattened, round colonies, with a clear-cut even edge, finely granular, with sometimes larger granules at the centers; yellow by reflected and bluish by transmitted light. There was also an opalescent appearance by transmitted sunlight. The odor was generally fecal, and the colonies presented an appearance of extreme fluidity, so that when touched with a platinum needle they tended to flow.

Typical motility was generally present in twelve-hour peptone-water cultures. In making a hanging-drop preparation, it was found that if any pellicle present were gently moved aside by tilting the tube and the platinum loop inserted just below the surface actively motile organisms were more certain to be obtained. The characteristic motility could be strikingly observed with the dark-field illuminator.

### THE CHOLERA-LIKE VIBRIOS

A striking feature observed during the routine examination for carriers was the large number—over one hundred—of vibrios isolated from the fecal cultures, which gave a negative reaction with the specific serum. A detailed description of these atypical vibrio forms I have made elsewhere.[3] The morphologic and cultural resemblances to the cholera vibrio were so close in some instances that definitely distinctive features were difficult to find. As a rule the indol reaction was absent or slight, and they were all non-pathogenic to animals, even in large doses. In some of the strains isolated, saprophytic properties, such as pigment formation, clearly indicated the nature of the organism.

The presence of these aberrant vibrio types in association in the cholera cases has been frequently observed, notably by Zlatogoroff,[4] and by McLaughlin and Whitmore[5] in the Philippines, but the exact significance of the occurrence is yet undetermined. A curious incident bearing on this association was noted at quarantine in the isolation of the greatest number of non-cholera vibrios at one time, in the passengers of a vessel among whom two cholera carriers were found.

### THE DIAGNOSIS OF CHOLERA

The occurrence during cholera epidemics of non-pathogenic vibrios, typically cholera-like in morphology, motility and cultural appearances, has caused such characters to appear of less account in the final differentiation of the cholera vibrio. Of more importance in the diagnosis of cholera are certain reactions of the body resulting from the invasion by the cholera vibrio, which are manifested especially in a powerful activation of those tissues concerned in the formation of the various cellular antibodies, the bacteriolysins, the agglutinins and precipitins. This phenomenon is witnessed in cholera convalescents, as well as in animals immunized against the specific organism.

*Agglutination.*—Although the agglutinating power of various strains of the cholera vibrio varies somewhat at times, it is always sensitive to the action of a strong antiserum, positive agglutination taking place with high dilutions of the serum, such as 1:10,000 and 1:32,000. The observation of agglutination may be carried out by the macroscopic method, using Wright's tubes. An emulsion of a 24-hour-old agar culture of the suspected organisms in broth or normal saline is mixed with the antiserum in various dilutions and drawn up into glass sedimentation tubes, which are sealed in the flame. Readings are taken at the end of two hours at 37 C. (98.6 F.), or twenty-four hours at room temperature. Controls with normal saline or normal horse-serum should be employed at the same time. Similarly, agglutination may be observed in hanging-drop preparations with the microscope. For general purposes the reaction is satisfactorily and quickly carried out by means of a macroscopic method with the naked eye. On an ordinary glass slide, an emulsion of the suspected organism is mixed with the diluted antiserum by means of a platinum loop. Immediate agglutination takes place with the cholera vibrio as shown in the formation of floccules and clumps in the hitherto opaque emulsion. It was observed that the maximum agglutination power of the cholera vibrio was seldom found to be as high as the titer of the serum employed. In suspected cholera convalescents, in which the cholera vibrio cannot be demonstrated in the stools, the patient's blood-serum may be tested for agglutination against a known cholera culture.

*Pfeiffer's Reaction.*—The reaction of Pfeiffer depends on the effect of a powerful cholera bactericidal serum on the cholera vibrio. An emulsion of the suspected organism is injected into the peritoneal cavity of a guinea-pig, together with the bactericidal serum. A positive reaction is given if specimens of the peritoneal fluid removed at intervals of a few minutes show disintegration of the vibrios. A control experiment should be made with normal serum. This reaction is specific for cholera and enables a definite diagnosis of cholera to be made.

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[2] Creel: Jour. American Pub. Health Assn., December, 1911, p. 899. Bendick: Jour. American Pub. Health Assn., December, 1911, p. 905.

[3] Craster: Jour. Infect. Dis., May, 1913, xii, No. 3, p. 472.

[4] Zlatogoroff: Centralbl. f. Bakteriol., 1909, xlviii, No. 5, p. 684.

[5] McLaughlin and Whitmore: Philippine Jour. Sc., 1910, v, 403.

*Complement-Fixation.*—It has been shown by the reaction of Bordet and Gengou[6] that specific serums contain a certain substance (*substance sensibilisatrice*) which, when combined with its corresponding bacterial antigen, has the power of fixing another substance "complement," present in all normal serums, in this way preventing hemolysis when added to sensitized capsules. This binding of complement by a specific cholera serum and a culture of cholera vibrios may be employed for the differential diagnosis of an organism suspected to be the cholera vibrio. The anticholera serum is inactivated by heating at 55 C. (121 F.) for thirty minutes. A twenty-four-hour agar culture of the suspected organism is used as antigen, previously killed by heating to 60 C. (140 F.) for one hour and dissolved in physiologic salt solution. If the inactivated specific serum and the bacterial culture (antigen) is combined with normal guinea-pig serum to supply complement and after incubation for an hour at 37 C. is then added to a mixture of hemolytic serum and blood-corpuscles, no hemolysis takes place if the suspected organism is the cholera vibrio, complement having been absorbed by the combination of the specific serum with its antigen, the cholera vibrio.

### THE CHOLERA CARRIER

It is well known that perfectly healthy persons may harbor the causative agents of certain diseases, notably in the case of typhoid fever and diphtheria, either as a persistent continuance of the organism in the secretion of the body after an attack of the disease or as an infection with the specific microbe without manifest subjective symptoms. The existence of a parallel condition in persons during cholera epidemics was observed by Rumpel in Hamburg, Metchnikoff in Paris, Vogler in Altona and Ivanoff in Berlin.

Thirty-one cholera-bacillus carriers were found among ships' passengers bacteriologically examined at quarantine during the period from July to November, 1911. A definite history of a recent intestinal attack was obtained in four of these carriers. The proportion of carriers detected to examinations made was considerably less than the number reported under similar conditions at Naples, 1910; at that time twelve carriers were found in 1,400 persons.[7]

*Treatment.*—Every person who was a cholera carrier was isolated and treated as a cholera patient. The difficulties in the treatment of such carriers are inseparable from the apparent condition of good health and freedom from subjective symptoms which are always present in these patients. Strict isolation was enforced, with all fecal matter rigidly sterilized until a negative bacteriologic finding was obtained. It was observed that a carrier detained at quarantine discharged cholera vibrios in the stools at irregular periods, between which intervals a negative finding might be obtained bacteriologically.[8] These negative periods were frequently of several days' duration. The potential danger to the public in the careless release from detention of a carrier of this kind would be manifestly great.

*Duration of the Infective Period.*—The length of time during which a cholera-bacillus carrier continues to be infective has been stated to vary within wide limits. Zlatogoroff[9] has recorded the isolation of the cholera vibrio from the stools of a person one year after recovery. Pasquale[10] succeeded in isolating the specific organism from the stools twenty-seven days after an attack of cholera. Saccone,[7] with an extensive experience, found cholera carriers to be infective between eleven and fourteen days. The majority of the carriers isolated at quarantine remained infective from a few days to two weeks or more; in one case the comma bacillus was present for fifty-four days.[8] Three or more negative bacteriologic findings at intervals of two days for a week or longer were required before a cholera carrier was released from detention.

### THE CHOLERA CASES

Twenty-four cases of cholera were treated at the Quarantine Isolation Hospital, with thirteen deaths; a rate of mortality of 54.1 per cent. Five of these patients were moribund on admission. The duration of an attack of cholera and the rapidity of its termination is dependent on the virulence of the infective process, so that the characters of the disease varied somewhat in the individual. In the acute cases the classic signs of vomiting, purging, collapse, muscular cramps and coma were early in evidence, the stools being sometimes continuous, with incontinence of feces. The typical rice-water evacuations seldom showed any fecal staining and from them the comma-bacillus was obtained in pure culture. One case of cholera sicca was remarked; the patient had no stools; the symptoms were collapse with cyanosis, with an abdomen distended with fluid contents. Recovery took place. The milder cases of cholera showed only a slight diarrhea with no great accompanying physical discomfort.

Although the skin temperature is subnormal in cholera, the rectal temperature was found to be consistently high (102 to 103 F.), with subnormal intervals throughout the attack. This fluctuating rectal temperature at times showed wide ranges during the day; a difference of 6 degrees Fahrenheit between the morning and the evening readings was recorded, and a subnormal morning temperature frequently rising to 102 to 103 in the evening. This oscillating temperature often persisted for some days after all clinical symptoms had disappeared. In certain of the fatal cases in which excessive reactive processes were manifested in the hyperpyrexia the rectal temperature before death rose to 109 F.

Four patients succumbed on the first day of illness, one of these between sunrise and 11:45 a. m. and another within eleven hours of onset. Three died on the third, three on the fourth and one each on the second, sixth and eighth days, respectively. In the non-fatal cases the cholera vibrio persisted in the stools for various periods of time after the cessation of acute symptoms, usually from the seventh to the fourteenth day, and exceptionally for much longer periods.

### SUMMARY

During June, July and August, 1911, ten cholera-infected ships arrived at quarantine, New York, from Mediterranean ports, bringing a total of 5,411 passengers and 1,789 members of ships' crews having been exposed to cholera. Six patients arrived sick and four were convalescent from the disease. Twenty-four cases were

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[6] Bordet and Gengou: Ann. de l'Inst. Pasteur, 1901, xv, 289.

[7] Saccone: Ann. d'med. navale, March, 1911, p. 315.

[8] Creel, R. H.: An Unusual Cholera Carrier, THE JOURNAL A. M. A., Jan. 20, 1912, p. 187.

[9] Zlatogoroff: Centralbl. f. Bakteriol., 1911, lvii, No. 4.

[10] Pasquale: Glor. med. d. R. esercito ed R. marina, 1893, p. 936,

treated at the isolation hospital on Swinburne Island, with thirteen deaths. Two cases occurred among released passengers in New York City and state, and one member of a ship's crew. One fatal case occurred among the quarantine employees. Thirty-one cholera carriers were detected by routine examinations; these were isolated and treated as cholera patients. Four of these gave definite histories of a recent sickness with diarrhea. During the four months of routine examination of passengers from infected ports for cholera carriers, 26,678 persons were bacteriologically examined.

Over one hundred non-cholera vibrios were isolated during the routine examination. Many of these resembled the vibrio of cholera so closely that no difference was possible, except the negative reaction with the specific serum. In the cholera cases, a fluctuating rectal temperature of a degree above or below normal persisted for some days after all clinical symptoms had subsided, and after the specific organism had ceased to be demonstrated in the stools. The cholera carriers with no subjective symptoms could be infective up to fifty-four days. The cholera cases remained infective by the presence of the comma-bacillus in the stools for one to two weeks after all symptoms had abated, exceptionally for longer periods.

### CONCLUSIONS

Time and length of voyage from infected districts does not confer any special immunity against the occurrence of Asiatic cholera in this country. The well-established existence of the cholera-bacillus carrier has altered considerably the aspect of cholera prevention, for we have to deal not only with real, but also with potential agents of infection. The high efficiency of present-day quarantine procedures has rendered the possibility of spreading infection from cholera cases extremely slight. The real danger to the public is not alone the person sick with the disease, but also the person infected with the specific organism and presenting no apparent symptoms of illness. In typhoid carriers the gall-bladder is known to be the store-house of the infecting organism. That a similar condition may exist with cholera carriers is suggested by the observations of Greig,[11] who demonstrated by cultural methods the presence of the cholera vibrio in the gall-bladder eighty-one times out of 271 cases of fatal cholera. In the prevention of cholera, besides the effective isolation of the sick there has developed in our experience at quarantine, the necessity of extreme caution in the release of contacts or fellow passengers from detention, before a routine bacteriologic examination has proved them free from the cholera vibrio and even after such a routine procedure there remains always a possibility of the escape of a bacillus-carrier who may have been examined during a negative interval of an intermittent discharge of the infecting organism.

When sporadic cases of cholera occur in any community (the so-called cholera nests) it would seem that the bacteriologic examination of drinking-water and of food, although advisable always, is not of the same importance as a diligent search for the true source of infection, the infected, presumably healthy person, the proper means for whose detection, although involving a state in great outlays of money and time, are of necessity justified in emergencies for the proper preservation of the public health and confidence.

I am indebted to the courtesy of Dr. F. C. Clark, chief medical officer of Swinburne Island Isolation Hospital, Quarantine, N. Y., for the opportunity to review the clinical reports of cholera cases and cholera carriers.

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[11] Greig: Lancet, November, 1912, ii, p. 1423.

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# THE "WASSERMANN-FAST TABES"

## A SEROLOGIC PRECURSOR OF TABOPARESIS

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The question of tabes from a diagnostic standpoint offers very few difficulties. Where clinical manifestations are few and indefinite, laboratory aids as elaborated by the latest serologic methods give ready and at times conclusive evidence of the presence of this disease. It is not my purpose to travel over well-beaten paths of diagnosis, be it clinical or serologic, but to offer to the neurologist a guide to therapy and to assist in the rendition of a prognostic opinion in this disease. To the serologist it may also be of interest to know that some forms of tabes behave differently from a serologic attitude than others. As there are different types of tabes clinically, so there are also various serologic manifestations of this disease. The clinician is thoroughly familiar with the form of disease which will ultimately present the full picture of taboparesis and is also acquainted with the type that is purely degenerative and lacks all evidence of activity in the meninges. The serologic development of the last few years in connection with diseases of the nervous system not only gave us the laboratory accompaniment of this disease, but also enabled the careful observer to point out here and there occurrences in the analysis of the serum and the fluid that are as important as the ability to diagnosticate this malady. It seems to me that neurologists are beginning to recognize the value of analyses of the cerebrospinal fluid and are gradually becoming more familiar with the utilization of laboratory data. One of the facts that I, together with Dr. L. Casamajor, pointed out in 1912, in connection with tabes, was the very favorable clinical and serologic reactions obtained with tabes of the "hyperlymphocytic" type. Our observations still hold good after a large additional number of such cases has been studied. On the other hand, we were considering the treatment of tabes that showed no cerebrospinal fluid abnormalities as rather inconsistent. Taking these things together, one can at a glance appreciate how much less informed we were in regard to the gauging of treatment before the era of "neurologic serology" as compared with the newer methods of procedure. The value of serologic data increases with their number, and it is with this in view that I have undertaken the writing of this article.

Having studied serologically over 650 cases of tabes of various types, and in some instances having observed the changes in the serum and cerebrospinal fluid on as many as twelve occasions in the same patient to note the adequacy of therapy, I had the opportunity to note the effect of various therapeutic procedures on the serology of a large proportion of cases and carried away the impression that there are distinct types of tabes that can be properly judged only after a thorough course of strenuous treatment. Although the patient may at the time of the first analysis show the serologic picture of tabes of the "hyperlymphocytic" type, the result of vigorous treatment will tend to show whether or not the serology is amenable to therapeutic effort. I have observed a number of cases in which despite the frequency, dosage and specificity of the remedy, the serum would still show a positive Wassermann reaction. A few more advanced cases would also show an unchanged positive Wassermann in the cerebrospinal fluid. I have designated these cases as "Wassermann-fast tabes" in contradistinction to those forms of the disease that, as shown by the Wassermann test, yield readily to therapeutic efforts. When one studies the serology of general paresis one is struck with the large percentage of positive Wassermann reactions obtained on the serum and spinal fluid of this disease. When the subject of percentage of positive results is studied critically, particularly the observations that give 100 per cent. positive reactions even in general paresis, one is fully justified in asking the question: Is it possible that the cases reported were never treated with the remedies commonly used in such cases? Still further: If they were treated, some even with great thoroughness, is it possible that the Wassermann reaction remained unchanged and gave 100 per cent. of positive results? These questions are rarely asked and the results are accepted unchallenged. There should be no 100 per cent. of positive Wassermann reactions, and the experience of the majority bears out my contention. The reason why the percentage of positive Wassermann reactions in the serum from tabetics ranges between 55 and 70 is that the treatment of many of these cases was, from the point of view of serology, apparently successful. The low percentage of positive results also speak for the amenability of the serology of this disease to therapy, for it is self-evident that the easier it is to influence a disease with proper therapeutic measures, the fewer positive results are obtained with the Wassermann test. The number of cases of tabes that give positive Wassermann reactions are composed chiefly of patients who were not treated recently, or were treated insufficiently or belong to the type of cases of "Wassermann-fast tabes." The reason why general paresis gives the greatest percentage of positive Wassermann reactions is due chiefly to the fact that very few positive reactions in this disease become negative after treatment, in other words, general paresis typifies the Wassermann fast neurologic disorder of syphilitic origin.

TABLE 2.—RESULT OF TEST IN TABOPARESIS, CASE 2*

| Treatment | Serology Performed | Serum W. R. | Cerebrospinal Fluid Analysis | | |
|---|---|---|---|---|---|
| | | | W. R. | Glob. | Lymphoc. |
| Hg. inunct. 30 doses 4 gm. | 3 weeks after therapy. | + | + | + | 53 |
| 6 weeks later, 21 injections Hg. salicyl. | 4 weeks after therapy. | + | + | — | 53 |
| 8 months later, 606 0.6 in vein | 4 weeks after | + | + | — | 50 |
| 1 week later, 606 0.6 in vein | 3 weeks after | + | + | — | 41 |

* Reduction of Fehling's solution normal throughout.

The negative reactions obtained with general paresis are composed chiefly of those of the early cases which frequently give a negative Wassermann reaction in the serum and a positive result in the cerebrospinal fluid. It is very proper to apply to the serologic analogy of the "Wassermann-fast tabes" and its relation to general paresis the dictum of Charles Darwin: *Natura non fecit Saltus*, which is borne out by the clinical course of this type of locomotor ataxia. In the twelve cases of the "Wassermann-fast" type observed by me, nine patients developed full-fledged taboparesis and three died shortly after the paretic signs manifested themselves. To cite a few cases:

Case 1.—Mr. H. S., aged 44, married; no children; lues eighteen years ago; shooting pains; girdle crises; Argyll Robertson pupils; Romberg phenomenon; no mental symptoms. Serology before treatment, positive Wassermann reaction in serum and fluid; excess of globulin; 60 lymphocytes per cubic millimeter; prompt reduction of Fehling's solution.

Case 2.—Mr. Sp., aged 52, married; wife had four miscarriages. Lues at 20; markedly ataxic; girdle crises; Argyll Robertson pupils. Serology before treatment, positive Wassermann reaction in serum, same in fluid; slight excess of globulin; 36 lymphocytes per cubic millimeter; normal reduction of Fehling's solution.

TABLE 2.—RESULT OF TEST IN TABOPARESIS, CASE 2*

| Treatment | Serology Performed | Serum W. R. | Cerebrospinal Fluid Analysis | | |
|---|---|---|---|---|---|
| | | | W. R. | Glob. | Lymphoc. |
| 0.6 salvarsan intraven. | 2 weeks after therapy | + | + | + | 33 |
| 1 week later the same | 3 days after therapy | + | + | + | 26 |
| 10 days later 914 | One week after therapy | + | — | — | 21 |
| 1 day later 914 | 3 days after therapy | + | — | — | 21 |
| 1 week after 914 intraven. | One week after therapy | + | — | — | 16 |

* Reduction of Fehling's solution normal throughout.

## REPORT OF CASES

The treatment given these patients by no means represents the most active specific therapy that could be employed. The reason for this was the discouragingly rapid decline in the general health of the patients. The first one of the two died two months after the last treatment. The second patient developed taboparesis one year after the last treatment and died in a paretic decline.

These cases of tabes represent the absolute "Wassermann-fast" variety of the disease. It is sometimes, however, possible to obtain a weakly positive result after very vigorous treatment, and on very rare occasions even a complete negative Wassermann. The latter, however, does not remain negative for a long time but may return to positive a week or two after the last negative analysis. These are only relatively fast tabetics whose Wassermann reaction sooner or later will reassume its absolute fast nature, initiating in the course of time the clinical signs of taboparesis. Time will tell whether salvarsan or any other as yet undiscovered remedy used in large and frequently repeated doses will ever tend to ward off the approach of an impending taboparesis in a tabetic; at present it seems that frequently repeated small doses of neosalvarsan produce very encouraging changes in the psychic manifestations of the disease. In my opinion a patient with tabes who presents an absolute or even a relative "Wassermann-fast" tendency should be given the benefit of this treatment with small doses (0.3 gm. of neosalvarsan) every third or fourth day. I do not think that the Wassermann will be influenced at all, or at most an absolute fast condition could be made a relatively fast one. In fully developed general paresis one encounters the absolute "Wassermann-fast" condition more often than in any other syphilitic disease of the nervous system, and as the serology of a tabetic inclines toward assuming the "Wassermann-fast" tendency, it is my opinion that the clinician should be on the lookout for clinical evidences of an approaching taboparesis.

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**Physiology and Dietetics.**—"The teaching of physiology on the subject of diet must be tested carefully by the light of clinical experience."—David L. Edsall, in *Clin. Jour.*

# AN EXPERIMENTAL AND CLINICAL STUDY OF INTERNAL HYDROCEPHALUS *

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Numerous methods have been suggested for the treatment of internal hydrocephalus, none of which have been productive of satisfactory results. So long as the etiology of this condition remains obscure, the treatment must necessarily be only symptomatic. In the hope of clarifying its etiology and thus affording a rational working basis for its relief, we have undertaken this investigation.

The present communication, which is presented as a preliminary report, includes observations on dogs after the production of experimental hydrocephalus, together with observations on patients suffering from the disease. We have also considered the manner and the place of formation and of absorption of the normal cerebrospinal fluid and the relation of these factors in the production of this pathologic condition.

## HYDROCEPHALUS EXPERIMENTALLY PRODUCED

From a survey of the literature we have been unable to find any record of hydrocephalus having been produced experimentally. In our experiments an obstruction has been placed in the aqueduct of Sylvius, and thus the only way of exit for the cerebrospinal fluid from the third and the lateral ventricles has been occluded. An internal hydrocephalus has invariably resulted. The following is the procedure:

A bilateral suboccipital decompression is made through an occipital midline incision. After exposure of the cerebellum it is retracted upward, and the foramen of Magendie carefully enlarged by incising the membrane joining the cerebellum and medulla. A piece of cotton in a small gelatin capsule, placed on the end of a graduated carrier, is inserted through this enlarged foramen of Magendie and gently passed along the floor of the fourth ventricle into the aqueduct of Sylvius, where it is deposited by withdrawal of the carrier. The symptoms which are observed following the operation are principally lethargy and vomiting (general pressure symptoms) dating from the time of operation. When carefully performed there are no irritative or destructive symptoms from the operation. This hydrocephalus therefore is due to a purely mechanical obstruction in the aqueduct, as there is no interference with the veins of Galen.

Since the venous obstruction is considered a possible cause of hydrocephalus, a series of experiments was conducted in which the vein of Galen and the straight sinus were ligated. In none of these cases did hydrocephalus result.

## ABSORPTION OF THE CEREBROSPINAL FLUID

There are many theories concerning the place and manner of the absorption of cerebrospinal fluid. In the study of absorption in the experimental and clinical work we have used almost exclusively phenolsulphonephthalein. This inert colored solution, first introduced into practical medicine as a renal test by Rowntree and Geraghty, has since been shown to be an accurate index of fluid absorption when the renal function is normal. It is very stable, is excreted in the urine with great rapidity, is easily detected in minute traces and is readily adapted to accurate quantitative estimation.[1]

Since an internal hydrocephalus can be experimentally produced by occluding the aqueduct of Sylvius, it is evident that absorption of fluid from the ventricles is less rapid than its production. In the studies of the absorption from the ventricles of patients with an internal hydrocephalus due to obstruction in the aqueduct, after the introduction of phenolsulphonephthalein in the lateral ventricles, there is excreted in the urine from 0.25 to 1 per cent. during a period of two hours; but when it is injected into the subarachnoid space of the same patient there is an excretion of from 35 to 60 per cent. in the urine in the same period of time. This demonstrates that the absorption of cerebrospinal fluid takes place almost entirely in the subarachnoid space.

It is evident that the fluid must be absorbed either into the blood or lymph-vessels. When phenolsulphonephthalein or other inert colored solutions are injected into the subarachnoid space. they appear in the lymph of the thoracic and right lymphatic ducts only after an interval of from thirty to fifty minutes, and only a faint trace is present even after two hours, whereas, they appear in the blood in three minutes and in the urine in six minutes and, as mentioned above, from 35 to 60 per cent. is excreted in the urine at the end of two hours. These facts indicate that the cerebrospinal fluid passes directly into the blood and that the lymph-vessels are not concerned in its absorption. There are three principal views regarding the manner in which the cerebrospinal fluid passes into the blood: (1) by means of stomata arranged along the venous sinuses; (2) through the pacchionian granulations, and (3) by a general process of osmosis.

When a suspension of fine granules is injected into the subarachnoid space the granules do not pass into the blood except in very minute quantities and after a long interval of time. Consequently the assumption of special openings (stomata) from the subarachnoid space into the venous sinuses seems unlikely. This applies to granules injected into the subarachnoid space under normal conditions of pressure. If pressure is used, especially on young tissues, foreign materials can easily be forced into the veins. In adult animals this requires a very high pressure. It should be noted that stomata were formerly believed to exist in the peritoneum to explain the absorption from this cavity, but this has been shown not to be the case.

That the pacchionian granulations do not play any special rôle in absorption can, we think, also be shown. These granulations are absent in many species of animals, are always variable in number and size and develop principally in adult life. After fine granules are injected into the subarachnoid space, local collections are deposited along the sinuses—especially the superior longitudinal sinus—in the interstices of the fibrous meshwork which forms the walls of the sinuses. These deposits are in all essentials similar to those in the pacchionian granulations. There is always a layer of dura and arachnoid separating these masses of granules from the blood in the veins. This is a much greater mechanical barrier to absorption than is present in the exposed capillaries of the pia-arachnoid.

After the injection of phenolsulphonephthalein into the spinal subarachnoid space (the communication with

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[1] It should be emphasized, however, that ordinary solutions of phenolsulphonephthalein are made up in alkali, which is sufficient to militate against its use in the central nervous system. To overcome this defect we use a neutral solution specially prepared for us by Hynson, Westcott & Co.

the cerebral subarachnoid space being closed), there is found to be a quantitative absorption proportionately as great as from the entire subarachnoid space. This shows that the absorption from the spinal subarachnoid space is similar to that from the cerebral. It is obvious, therefore, that cerebrospinal fluid is absorbed by a diffuse process from the entire subarachnoid space and is not restricted to any special locality, as, for instance, the region of the venous sinuses or the pacchionian granulations. From the foregoing observations, absorption from the subarachnoid space appears to be very similar to that from the pleural and peritoneal cavities, though it is somewhat less rapid.

### FORMATION OF THE CEREBROSPINAL FLUID

It has long been known that there is an active formation of cerebrospinal fluid as evidenced by the rapidity with which the fluid reforms after it has been withdrawn either by lumbar or ventricular puncture. The endowment of the chorioid plexus with an elaborate blood-supply indicates that it is a structure with a special function. Since the work of Faivre (1854) and Luschka (1855) showing the secretory character of the cells, the chorioid plexuses have been regarded as glands, from which at least part of the cerebrospinal fluid is formed. The discovery of secretory granules by *intra-vitam* staining by Francini, and also by Bibergeil and Levaditi, leaves but little doubt as to the secretory nature of this function.

We have shown that practically no absorption takes place in the ventricles, at least under the pressure from an abnormal accumulation of fluid. Since this is true and since hydrocephalus results from an experimental block in the aqueduct of Sylvius, it is evident that the fluid forms in the ventricles. These facts demonstrate an irreciprocal permeability of the fluid-forming structures, and emphasizes the secretory rather than the mechanical formation of the cerebrospinal fluid.

### OBSERVATIONS ON PATIENTS WITH HYDROCEPHALUS

In these cases we have applied the phenolsulphonephthalein test in order to determine the amount of absorption from the ventricles, the amount of absorption from the subarachnoid spaces and whether or not there was free communication between the ventricles and the subarachnoid spaces. Subsequently the results of these tests have been compared with the pathologic findings. Phenolsulphonephthalein, as has been said before, is perfectly harmless, and when used for injection into the ventricles or subarachnoid spaces produces no reaction.

From observations made on patients without hydrocephalus it has been possible to establish a normal standard for the excretion of phthalein after its injection into one or the other of these cavities. In all cases the kidney function has been shown to be normal. When injected into the ventricles phenolsulphonephthalein normally appears in the urine in from ten to twelve minutes, and after two hours from 12 to 20 per cent. is excreted. After its injection into the subarachnoid space, it appears in the urine in from six to eight minutes, and from 35 to 60 per cent. is excreted in two hours.

When phenolsulphonephthalein is injected into the ventricles, it appears in the lumbar spinal fluid within two or three minutes. In hydrocephalus this becomes a most important test, for it enables one to determine accurately the patency or obstruction of the channels of exit from the ventricles to the subarachnoid space. Furthermore, fluid passes upward into the ventricles after the injection of phenolsulphonephthalein into the lumbar subarachnoid space.

By comparing the results of these tests with those obtained in hydrocephalus, we are enabled to establish two types of this disease. In the first type, after the injection of phenolsulphonephthalein into the ventricles, the time of its appearance in the urine is greatly delayed (from twenty to forty-five minutes) and the quantity excreted in two hours is practically negligible (from 0.25 to 1 per cent.). The excretion of phenolsulphonephthalein in this group after its injection into the subarachnoid space, however, is practically normal (time of appearance from six to eight minutes, quantity excreted in two hours from 35 to 60 per cent.). Furthermore, after the injection of phenolsulphonephthalein into the ventricles, it has not, in the cases observed, appeared in the spinal fluid. In this group, we have found at necropsy an obstruction to the passage of cerebrospinal fluid from the ventricles to the subarachnoid space. In two cases there was a congenital closure of the aqueduct of Sylvius, a third showed old adhesions obliterating the basal foramina of Magendie and Luschka, and in the fourth these foramina were closed by a thick tuberculous exudate which completely covered the base of the brain.

In the second type the excretion of phenolsulphonephthalein after its injection into the subarachnoid space is greatly diminished (from 8 to 15 per cent.), and the appearance time delayed (from twenty to thirty minutes). The amount excreted after its injection into the ventricles likewise is greatly diminished, undoubtedly due to the low subarachnoid absorption. In contradistinction to the first type the communication between the ventricles and the subarachnoid space is open. This is shown by the prompt (from two to three minutes) appearance in the spinal fluid of phenolsulphonephthalein after its injection into the ventricles. We have had the opportunity of examining two patients of this type, but as yet have made no pathologic observations. In both there has been an antecedent history of meningitis, one of which was due to the meningococcus.

These two types of hydrocephalus may be readily differentiated by determining the patency or occlusion of the channels of exit from the ventricles. In Type 1 these channels are obstructed and hydrocephalus results because there is no absorption from the ventricles. In Type 2 the channels are patent and hydrocephalus is due to the diminished absorption from the subarachnoid space.

It is a pleasure to express our gratitude to Professors Halsted, Howland and Cushing for suggestions during the course of the work, and for the opportunity of carrying out these investigations.

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# SOME RECENT CONCLUSIONS ON ABDOMINAL ROENTGEN-RAY WORK

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At present the Roentgen-ray bismuth method of diagnosing conditions of the alimentary canal is generally utilized. Since the work of Holzknecht was advanced, roentgenologists, and following them, surgeons and internists, have been accepting various reports as diagnostic. During the present winter I have checked up my Roentgen-ray findings with those of the laboratory and those noted at operation, and a few of the facts of the Roentgen-ray method of examination alone seem worthy of presentation.

After a trial with several methods, I find that plugging the cardia so as to retain the bismuth in the esophagus and then making stereoscopic plates of the esophagus while the patient is in the standing position is the best means of diagnosing new growth of the esophagus before marked stenosis exists. This is true of studies of the gullet itself and also of extra-esophageal conditions. The second method that answered to good purpose was giving the bismuth salt in about 25 gm. quantities suspended in two ounces of syrup of acacia. This makes about four swallows and thickly coats the interior of the gullet, giving fairly sharp shadows for studying the course of the canal as well as its rugae and for gaining an idea of the structure when viewed fluoroscopically.

In the study of motility and exit from the stomach in 203 cases of distinct gastroptosia, in which hourly x-ray observations were made, the conclusion was plain that the x-ray method of diagnosing stasis in the stomach is not as practical as the test-meal method. One hundred and twenty-six of these cases examined by the bismuth x-ray method showed delay of exit of six hours or more, while only thirty-one showed the delay by the test-meal method. In some instances the bismuth x-ray method showed a delay of nine hours or more, when the test-meal method showed a normal evacuation. Instances were encountered in which bismuth was present in the stomach as late as eighteen hours after ingestion, while the stomach on a mixed meal was empty in four and one-half hours. Further, in many cases, apparently from one-fourth to one-half of the amount of bismuth ingested was present in the stomach six hours afterward, and the studies of the pylorus and of the motility as seen in the plates and the test-meal findings showed the exit as well as the course of bismuth to the ileocecal region to be normal. It is apparent, whatever has been advanced to the contrary, that the method of examination by food extraction is decidedly more to be depended on in gaining an idea of exit from the stomach than is the bismuth x-ray method, for it was strongly suggested that foods pass from the stomach in decidedly less time than will bismuth or any other form of metal salts used to throw a shadow, probably because of the pulverized salts adhering to the mucosa. Studies were made by giving the bismuth suspension after a mixed meal hoping that the meal would cause a normal exit of the bismuth, but it was found in a number of instances that the bismuth caused a delay in the exit of the food; and, if the bismuth was given before the food was taken, the delay of the bismuth was more marked in that it even held the food back somewhat.

Those cases in which a rectal injection of bismuth, to outline the colon, and bismuth by mouth were given at the same time showed, in hourly studies of the stomach afterward, that the bismuth in the colon caused some retention of the bismuth in the stomach, and it therefore seemed unwise to continue the procedure of noting both the colon and stomach at the same time.

It was plain in some of the gastroptosis and splanchnoptosis cases that the method of estimating the rate of transit through the intestine to the ileocecal valve to be six hours, and the time for its accumulation in the descending colon, sigmoid and rectum to be twenty-four hours, should be modified. Seven of the cases in which the bismuth was localized in the cecum and proximal transverse colon at the end of the twenty-four hours showed no diseased condition in the colon other than atony and neuromuscular dilatation. From the plates of these cases the belief seemed warranted that the rectal-injection method for outlining the colon and studying its anatomy is better than the method by mouth in which the making of observations at intervals of six hours or more to note the transit of the bismuth is used. That is, in so far as the colon is concerned, upward transit of bismuth is generally a better means of studying the motility and stricture than is the use of bismuth from above, although an occasional case could be diagnosed by the descending instead of the ascending bismuth.

The winter added three cases in which ulcer was seen pitted with the bismuth. Against these three, twenty-seven were diagnosed as gastric or duodenal ulcer, gastric ulcer being found twelve times. Of the fifteen remaining all were duodenal ulcers but one, which was a mass of adhesions in which a cause could not be figured out satisfactorily. In two of the duodenal ulcers, gastric ulcer was also present, and in one of the gastric a duodenal ulcer was found. The twenty-seven patients were all operated on, those not operated on not being reported. In the cases of duodenal ulcer the diagnosis was best made by the history and the laboratory methods rather than by the x-ray method, which in my experience was too fallacious for accurate diagnostic deduction.

Carcinoma of the stomach was best diagnosed by the x-ray method, for by it four cases were diagnosed early enough for complete excision and expectation of a cure; in none of these was the history, test-meal or other laboratory methods of so much value. In the late cases either or any combination of methods sufficed.

Adhesions of the colon were best diagnosed by the x-ray method, there being no laboratory findings to take its place. An occasional case of gall-bladder adhesions was diagnosed by x-ray, but this method could not be depended on as could the history, examination and an occasional suggestive test-meal leading to the diagnosis of cholelithiasis or chronic cholecystitis. In chronic appendicitis the x-ray was almost valueless, the history and examination methods still being the best. Lane kinks were so commonly met with when taking x-rays in the Trendelenburg position that it is now doubtful to me that they have the surgical significance Mr. Lane placed on them. In only nine of the 167 cases in which they were noted could they be proved to be factors in causing delay at their site or above it in the stomach. Further, in the 200 or more laparotomies which I attended during the winter in which Lane kinks were searched for, the characteristic kinks were present in at least 90 per cent.; the same was true of the lesser number of necropsies performed.

Four cases of renal stone were encountered in which the renal calculus was not suspected from the history; in most cases in which this condition was suspected from the history and urine findings, renal stone shadows were seen in the kidney substance, pelvis, or ureters. When in the latter, all of them showed the stoppage of the transit of the stone at the brim of the pelvis or just short of the bladder. One case in a series of plates showed definitely what looked like a calculus in the pancreatic duct; operation proved it to be a calcified gland outside of and near the head of the pancreas.

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# THE TREATMENT OF PARALYSIS OF ANTERIOR POLIOMYELITIS

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Laymen, and some members of the profession, accept a statement made by Dr. Simon Flexner of the Rockefeller Institute, New York City, that no treatment is available at the present time for anterior poliomyelitis, as referring to the subsequent paralysis, whereas, Dr. Flexner is referring to the inflammation in the cord. It has been the means of deterring parents from making an effort toward treating the paralysis occurring in their children. What Dr. Flexner wished to convey in his remarks was that as yet nothing was known to arrest the inflammation in the cord and prevent the paralysis occurring before paralysis appears.

Fig. 1.—Case 1. Perfect recovery after treatment by high-frequency current, massage and muscle education.

Fig. 2.—Case 2. Disease began at 1½ years; treatment, 14 years later; recovered function in face and arm in 6 months.

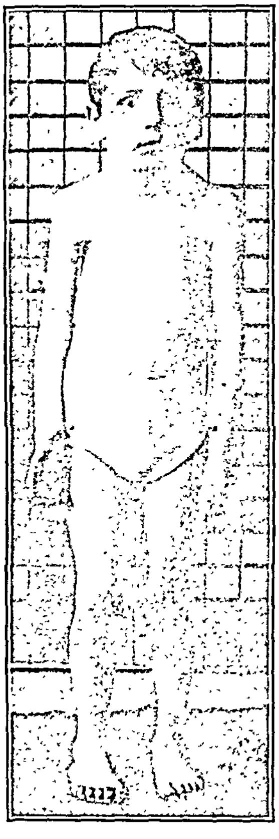

Fig. 3.—Case 3. Recovered function in arm and legs with treatment by electricity and massage, etc.

What can we do to bring about the best return of function in the muscles affected by the paralysis? What should treatment consist of? The treatment herein presented consists of the use of electricity, massage, hydrotherapeutics and muscle education, in which there is a mental concentration to guide the muscle effort.

Space will not permit of the description of splints either for prevention of deformity or aiding motion.

## ELECTRIC TREATMENT

After an extended review of medical literature, I have failed to find any detailed descriptive method of the use of electricity and massage in infantile paralysis, so I shall describe what I consider to yield the best results. When should electric treatment begin, and what form of current should we use? Many writers advise waiting from four to six weeks after the temperature becomes normal before doing anything in the way of treatment. According to the rules of the department of health of the city of New York, six weeks' quarantine is required. I have found that we obtain the best results by beginning when paralysis appears and even before the temperature is normal.

I have found, in the application of the Oudin or high-frequency current in cases of obliterating endarteritis, that the skin became blanched and remained so for several minutes, showing that the primary effect of the high-frequency is a contraction of the blood-vessels. With this effect in view, hoping to reduce the blood- and serum-compression on the nerve-cells in the spinal cord, I have, in the first few days of the paralysis, applied this current along the spinal column and feel positive that I have relieved the compression in the cord and hastened recovery.

Through the experiment of the United States government physicians in the Philippines, we have discovered that the high-frequency current materially destroys bacteria in water and also destroys their toxins. Hence we may conclude that it has a beneficial effect on the inflammation in the cord, in addition to its mechanical contraction of the blood- and lymph-vessels. When the temperature is between 98.5 and 99.5 F. and in some cases in which high temperature continues for several weeks, I have not let this deter me from treating the patient.

I give to the muscles involved a sinusoidal current, alternating with a combined galvanic and faradic current that contracts seventy-two times to a minute, synchronous with the heart-beat; and I regard this as an aid in the effect. It is known that contraction of the muscle can be obtained by means of an electric current when none can be obtained by the will; hence, this is a valuable means of retaining and developing the muscle fiber until it comes under the guidance of the mind.

Although many differences of opinion prevail as to the application of the sponge electrodes, I am in the habit of applying them at the origin and insertion of the muscle or muscle-groups involved, always laying stress on the importance of approximating the origin and insertion of the muscle as nearly as possible. For instance, in treating the peroneal group, these muscles being most frequently involved, one sponge is placed over the middle third of the outer side of the fibula, the foot flexed as much above a right angle as possible and the other sponge applied over the insertion of these muscles on the outer side of the foot. In this way, the bellies of the muscles are relaxed and a contraction is made more easily.

I believe that much foolish stress has been laid on the reaction of degeneration and I wish to prove, from a large practical experience, how deceptive it may be. It is said that a failure to obtain a muscle contraction by a galvanic or faradic current is an evidence of degeneration of the muscle fiber and that no improvement can be looked for in this paralyzed condition in the future. Do we fail to obtain a contraction in most cases? No! We find that the cutaneous surface will not tolerate the pain of the current and we must desist before contraction takes place, for most of the cases occur in children under 5 years of age, who see no reason for enduring the electrical pain. This is even true in other cases, when the age of the patient and his cutaneous tolerance are greater; the strong current may give no reaction and still reappearance of function may occur. Hoffa always cut down on the muscle to determine its character.

The strength of the currents used should be the weakest that will produce a contraction, and it is never to be used after contraction of the muscle ceases, nor longer than from two to three minutes on any particular muscle group, or from six to twelve minutes on the body at one seance. If this method is followed the child will not cry from pain, or have its nervous system upset by too long-continued electric treatment. I regret to state that the worst results seen by me have been in children of physicians who have had an excess of treatment; that is electricity given from one half an hour to an hour daily has inhibited the recovery and eaten up, as it were, all of Nature's element of repair.

Strychnin may be given internally or a solution used on a sponge and introduced locally, to increase the contraction of the muscle fibers.

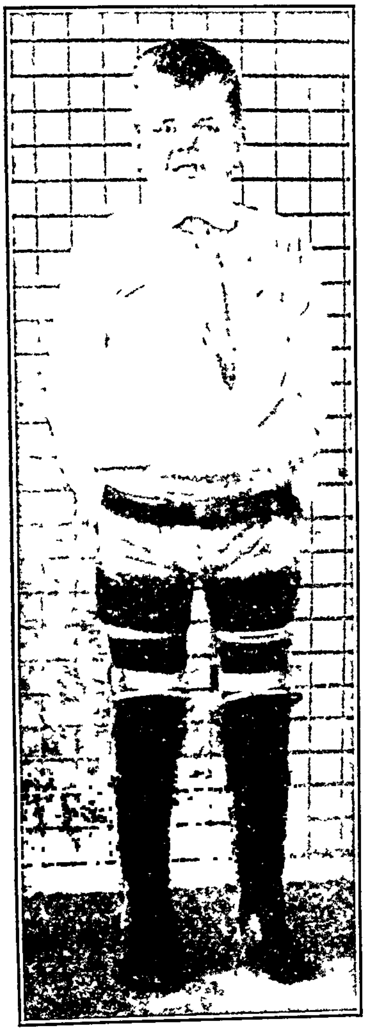

Fig. 4.—Case 4. After three months' treatment, able to stand alone with braces.

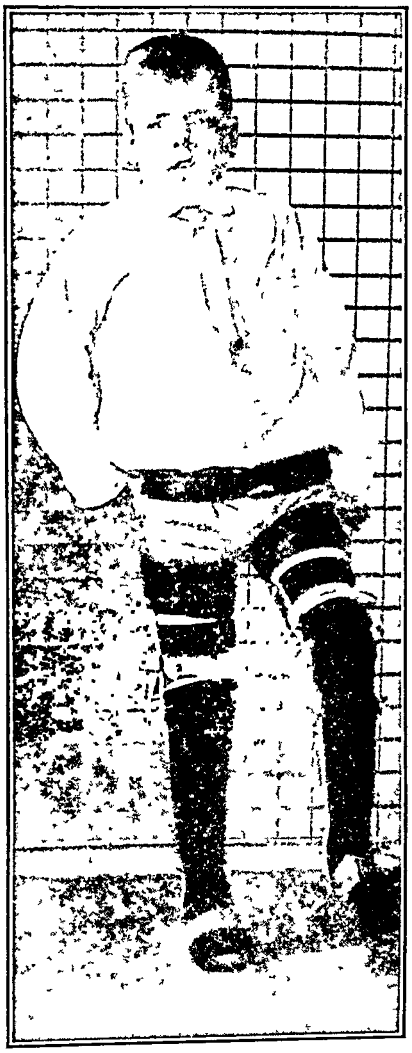

Fig. 5.—Case 4 Patient can lift leg at an equal angle or right angle.

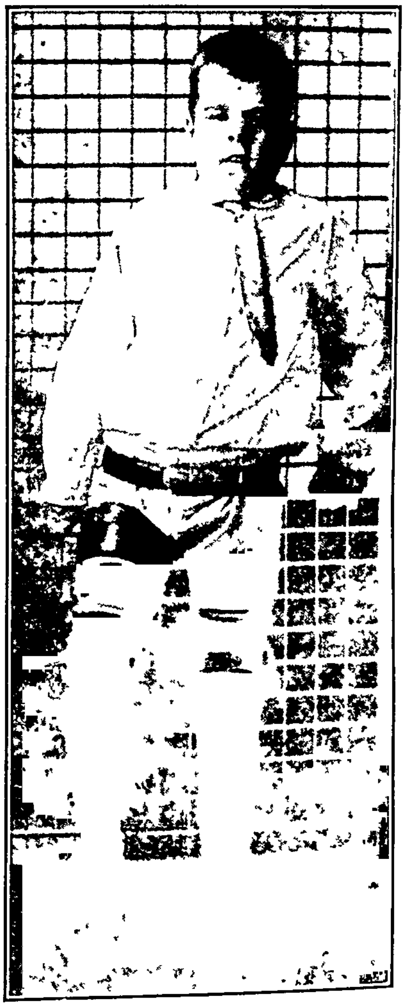

Fig 6—Case 4. Patient can lift right leg to right angle.

### MASSAGE

Dr. Benjamin Lee[1] says: "In the essential paralysis of infancy, truly wonderful results are obtained by massage." Massage treatment should be entered on the moment the acute inflammatory symptoms have disappeared and be continued daily in the face of seeming absolute ineffectiveness, for weeks and even months. Cases in which no improvement can be detected for long periods often suddenly begin to improve and progress with great rapidity.

The effect of massage may be classified as follows: mechanical, reflex, thermal, electrical.

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[1] Lee, Benjamin: Hare's System of Practical Therapeutics, ii, p. 321.

1. The mechanical effects are by far the most important, but the others should not be overlooked or forgotten. They consist of the interchanging of cell contents under the influence of alternate pressure and relaxation; a quickened movement of the blood in the capillaries, especially in the muscular tissue; increased activity in the movement of the areolar fluid; acceleration of the currents of both blood and lymph in their respective channels.

2. The reflex or purely nervous effects of massage are obtained by light stroking and percussion. The former produces results which can only be explained on the supposition that it acts as a stimulant to the reflex system of nerves, the force used not being sufficient to account for any change on the mechanical theory.

3. The thermal effects of massage and movements are almost too apparent to need scientific demonstration; everyone is familiar with the fact that both muscular contraction in the form of ordinary exercise and simple friction develop bodily heat in a striking degree. Dr. Weir Mitchell, in his essay on "Fat, Blood and How to Obtain Them," notes (what has been observed by many others) that he has frequently seen the strangely cold limbs of children suffering with infantile paralysis gain from 6 to 10 degrees F. during the massage.

4. The electric effect of massage results partly from the development of the surface heat, partly from the surface friction, partly from the attrition of the muscular fibers and cells, and partly from the nerve stimulation and chemical action.

Graham observes that muscles give a much more ready, vigorous and agreeable response to the will and to the faradic current after massage than they did before.

A child suffering from infantile paralysis was introduced; the affected limb having a surface temperature of 70 F., the poles of a battery were applied to a limb, and 11 milliamperes were required to produce muscular contraction; the limb was then massaged and the temperature was found to have risen to 95 F.; the poles being applied at the same points, contractions followed the employment of only 5 milliamperes. It is evident, therefore, that massage diminishes the resistance of the tissues to the electrical current and increases the electrical contractibility of the muscles.

As some men prominent in orthopedics and neurology have condemned the use of electricity and massage, I have taken one of the most recent articles, as illustrative of this side of the subject; that is, Dr. Henry Ling Taylor[2] says: "The conventional treatment by electricity and massage is completely ineffectual." To support this position, he continues: "This was publicly acknowledged to Dr. Bernard Sachs of New York, a distinguished neurologist, etc., and chairman of the Collective Investigation Committee of the New York epidemic of 1907, at the Congress of American Physicians and Surgeons, at Washington, May 10, 1910. In these words he spoke of electricity and massage: 'I consider that the time given to massage and electricity, in these cases, is time wasted. I cannot see that these same methods do any definite good.'"

It is true that Dr. Sachs made the preceding statement in May, 1910, as I was present at the time; but five months later, on Oct. 24, 1910, at the New York Academy of Medicine, Dr. Sachs,[3] in discussing this subject, spoke of electricity and massage in the highest terms, as he had previously done, thus showing that a man of the highest standing, from a later and more comprehensive knowledge of the subject, completely changed his views of the value of electricity and massage—a striking illustration of the old adage, "Wise men change their minds."

Dr. Taylor's unconscious accord with this view is shown on the next page in his own article, where he speaks in the highest terms of vibration (which is a simple mechanical massage) and active and passive movements (which have always been classed under Swedish massage).

The abuse of treatment is found in prolonged massage. Children who receive an hour or more treatment daily cannot improve in the face of such a physical tax. I have seen many cases in which the overtreatment has deterred the progress of recovery. Fifteen to twenty minutes is sufficient treatment to administer daily.

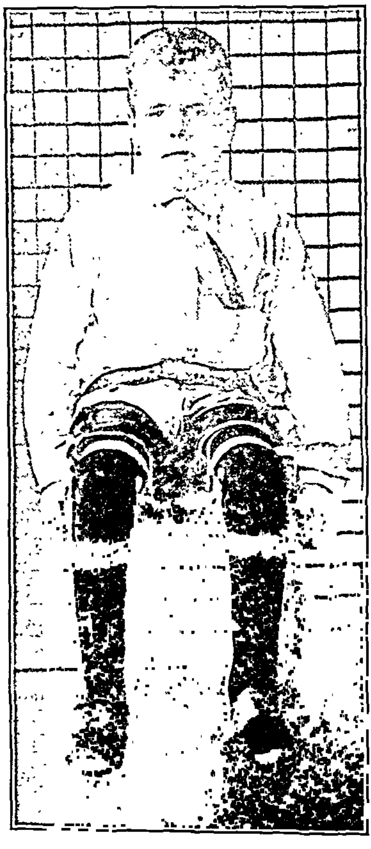
Fig. 7.—Case 4. Patient bearing weight on braces.

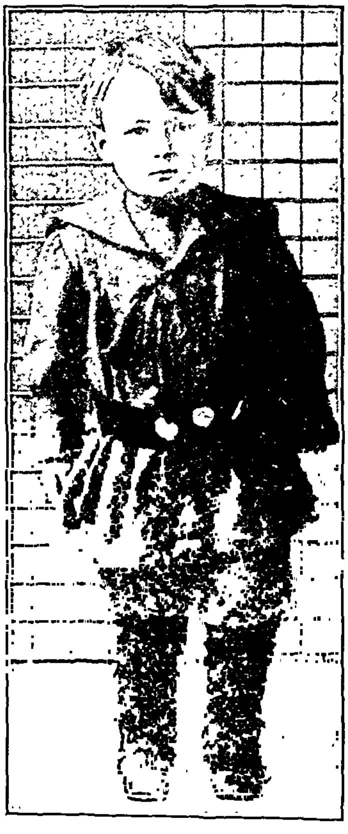
Fig. 8.—Case 5. After one year of massage, electricity and muscle education, patient is able to walk with almost normal gait.

### HYDROTHERAPEUTICS

The use of the bath, whereby we may float the limbs and aid motion, is a valuable adjunct in treatment. I wish to draw attention to the value of immersion of the affected limb in warm water from 95 F. to 102 F. for twenty minutes each night, in which we find that the

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[2] Taylor, Henry Ling: Med. Rec., Oct. 15, 1910, p. 660.

[3] Sachs, Bernard: Treatment from the Neurologist's Viewpoint, in a Symposium on the Treatment of Acute Anterior Poliomyelitis, THE JOURNAL A. M. A., Oct. 22, 1910, p. 1465.

62½-pound pressure of the water when removed to the atmospheric pressure of 15 pounds to the square inch results in a dilatation which, together with the heat absorbed, produces an effect on the trophic centers and improves the temperature and growth of the limb. The paralyzed limb retains this heat for hours.

### MUSCLE EDUCATION

Finally, I wish to call attention to a class of active and passive exercises done before a mirror, having the patient concentrate his mind on the affected muscles. When the origin and insertion cannot be approximated by an effort of the will, the attendant aids in the effort.

After a time it is found that the motion may be brought under the control of the will. It is known that when motion is guided by mental concentration, the sulci in the gray convolution in the brain presiding over this motor area are increased, as well as the caliber of the nerve going from the cortex to the periphery. It has been demonstrated by Anderson, of Yale, and others, that when a person is securely placed on a body balance and concentrates his mind on an extremity, the hyperemia thus produced tips the body balance in the direction of this limb.

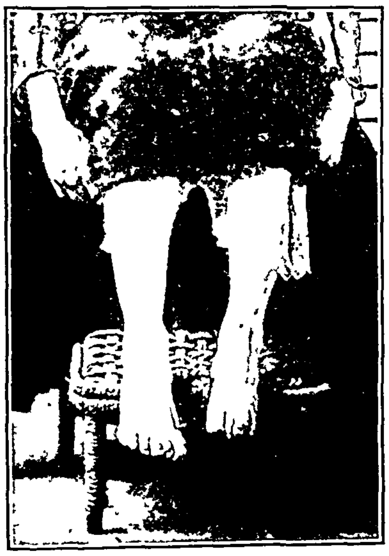


Fig. 9.—Case 6. Recovery after 20 years' daily treatment, massage and electricity by motion.

Figs. 10 and 11.—Case 7. Result of severe attack of infantile paralysis.

A moment's thought makes clear the fact that the nerve efficiency or nervous control as displayed by the gyrations of the nautch dancer can be developed by any person in any set of muscles if a proper effort is made for development of sufficient nerve force and nerve control. The stimulus transmitted from the brain to the periphery depends on the caliber of the conducting nerves, as the diameter of copper wire regulates the volume of electric current capable of transmission. We must now realize that the concentration of the mind on the muscular effort not only initiates the movement, but also determines blood to the controlling nerve centers, producing growth and development in the conducting filaments.

In this treatment of infantile paralysis, in addition to the application of massage, the treatment by the galvanic, faradic, sinusoidal, and high-frequency electrical current, in children over 3 years of age, a course of muscle education before a mirror is added, which I regard as one of the most important in its treatment, because recovery is best brought about by the action of the will, influencing action after massage and electricity have brought the muscle under the control of the mind.

The muscles most frequently involved in infantile paralysis are the peroneal group, and the plan of exercising one set of muscles can be utilized in another set of muscles involved. Placing the child in a chair before a mirror in a comfortable position, I first approximate the origin insertion of this muscle group by bringing the foot up to a right angle with the leg, and then urge the child to aid in bringing up the little-toe side of the foot through an arc of about 30 degrees. If the muscle contraction is such that the child cannot do this alone, the instructor places one hand on the knee to keep the leg in the position, and places the other hand under the foot, which greatly aids the efforts of the child in producing the required contraction. This should be repeated several times, but not to the point of overtiring these weakened muscles. Each set of muscles should be contracted in a similar manner. If the motion cannot be brought about, still the mental effort should be made for the attainment of this action.

To realize how efficient this method is, I wish to state that through this, combined with other treatment, I have been able to show at medical meetings some forty-three patients practically cured, who were unable to walk for periods extending from nine months to four years, having received some form of treatment during this time by other physicians, and having been referred to the Hospital for Deformities and Joint Diseases by such able observers as Kerley, Koplik, Mandl and many others.

It has been learned from necropsy that when areas in the brain have been destroyed by tumor or cysts, the function for this area has continued, and by the decussation of the nerves other areas in the brain have taken up the function. I am of the opinion that in cases in which recovery has taken place in paralysis, after a few years, the motor conduction from the brain to the periphery has been conducted through other motor tracts in a new circuit, passing around the damaged area in the cord.

### REPORTS OF CASES

Case 1.—Gertrude G., aged 6, normal delivery; previous history not pertinent. I was called by Dr. Brainglass to confirm his diagnosis of infantile paralysis on June 13, 1910. Sister of the patient had also had the disease. When I saw this child both legs were involved; the paralysis extended up the spine, and seemed to be of the progressive type. Hoping to stay the advance of the paralysis and expedite a recovery, having explained to the doctor the benefit I hoped to obtain by the d'Arsonval current, and receiving the concurrence of the family, I had the child removed to the Hospital for Deformities and Joint Diseases, where, after the first two days' treatment with high-frequency current along the spine, a marked improvement in the child's condition was shown. This treatment was kept up and combined with the other treatment of massage and electricity as herein described.

The child has made an almost perfect recovery; can bear her weight and hop on either leg, and walks with a normal gait. Several other patients have been thus treated.

The following case is shown to correct two long-standing fallacies: one, that no improvement will occur, whether spontaneous or under treatment, after one year; the other, that after failure to react to either the galvanic or faradic current, known as the reaction of degeneration, no improvement can be looked for.

Case 2.—Frank S., boy, aged 16, when 1½ years old had an attack of infantile paralysis involving his face and right arm. Fourteen years after this attack he appeared at the hospital hoping to receive treatment that would improve the condition of his face. The right side of his face was paralyzed, and he could not close his right eye in the least. He was turned over to Dr. Charles Rosenheck, who had had five years' experience at the Roosevelt Hospital Dispensary, under Dr. Starr (department of neurologic diseases), and who reported to me that he was satisfied that his reaction of degeneration was such as to be beyond all hope of the slightest benefit. I requested the other members of the staff to confirm this condition, as I wished to see if, after the lapse of fourteen years, with a positive reaction of degeneration, any improvement could take place. The improvement was so great after being under constant treatment for six months (the boy being able to close eye and produce wrinkles in his forehead, with a return to the normal outline of the affected side of his face) that he was shown at the pediatric, neurologic and orthopedic sections of the Academy of Medicine of New York City.

Many other similar cases have been encountered.

Case 3.—This patient was referred to the hospital by Dr. Koplik, seven months after initial paralysis. When admitted, all the muscles were flaccid; child had no use of arms or legs; all muscles of respiration, including diaphragm and muscles of neck, were involved.

Under massage and electricity, the muscles of both legs have regained their normal function; nearly all function has returned to the left arm; function of the right deltoid is absent. but the trapezius and flexors of the hand have regained their function. There has been some atrophy of the pectorals and apparently some of the intercostal muscles, as shown in the picture.

When the child was admitted to the hospital we looked forward to obtain a necropsy. The extreme condition of this child makes the amount of recovery almost remarkable.

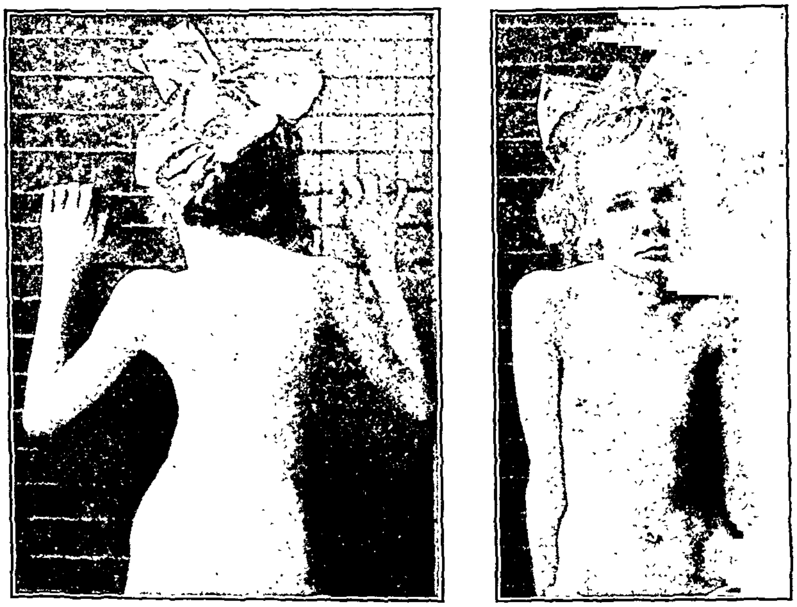
The following case represents a type of recovery partial in the one leg, with promise of a flail leg in the other:

Case 4.—Paul E. was seen in consultation and referred by Dr. Charles G. Kerley on Oct. 16, 1910. No spontaneous resolution had taken place in the right leg, and apparently from his muscular condition he gave no promise of improvement, while the other leg had very little ability to perform the normal motions, much less bear his weight.

The child had been ill since the end of July, 1910, with no spontaneous resolution; very little was looked for in the way of improvement. With Dr. Kerley's concurrence, the patient was removed to the hospital. As shown in the picture, after three months' treatment, he is able to stand alone in braces; is able to lift both limbs, at an equal or right angle; bear the additional weight of the braces, and I am looking for progressive improvement.

Case 5.—Arthur H., after initial attack, received four months' treatment at one clinic, eight months' treatment at another clinic, and on going to the third clinic, an operation for fixing the foot and ankle was suggested, as apparently there was extensive atrophy and no function.

At that time the patient's mother met the mother of another patient, who had had her child for treatment at the second institution for three years, with no ability to stand or walk, and who informed Mrs. H. that under treatment at the Hospital for Deformities and Joint Diseases for five months the child was able to walk without braces. Mrs. H., regarding this as an absurdity, made a special visit to this child's home, and seeing what she regarded as a miracle, brought her own child to the hospital.



Figs. 12 and 13.—Case 7, showing improvement after one year's treatment. Treatment by traction on extremities and head with daily electricity and massage to muscles.

This child was under treatment for seven months before he gained any promise of bearing his weight on his right leg, and after one year he is able to walk with almost normal gait.

The following case is shown to illustrate how massage and electricity, carried out by the parents alone, has won success, when many prominent physicians, who were consulted from time to time, made the darkest prognosis, with no promise of the use of either limb:

Case 6.—Olive B., when 1½ years of age had an attack of infantile paralysis, with both limbs involved; patient was not able to bear her weight on either limb for two years. During this time, various physicians were consulted, and the mother was told that the case was hopeless. At the advice of an old physician, the mother herself purchased a battery and gave the child massage and electricity. At a later time, braces were ordered by institutions and applied, but as the mother thought that this did not aid in the recovery, they were discarded.

Nevertheless, the mother proceeded in the massage and electricity, keeping up the treatment almost daily for twenty years. The girl is now 24 years of age, has no difference in the length of her legs, but the right foot is 1½ inches shorter than the left. She is just recovering from a corrective operation on this right foot.

I am particularly pleased to demonstrate through this case how much can be done through the affectionate perseverance of a parent, recognizing the improvement derived from the treatment, in opposition to the advice of many physicians that she consulted, also the advice she received in a number of institutions.

Case 7.—M. T., referred to the hospital by Dr. Reginald H. Sayre, who took the original photographs, suffered from a severe attack of infantile paralysis in the epidemic of 1907. The original diagnosis, from pain, was regarded as one of rheumatism, and this diagnosis was confirmed by consultants. Her total paralysis was not noticed until two weeks after the original attack. After six months she was referred to an orthopedic specialist and she journeyed from Yonkers to New York once a week to receive treatment, which consisted of electricity. The journey back and forth completely exhausted her for twenty-four hours.

The curvature in her back became so pronounced that a brace was applied. The deformity progressing, another consultation with a second orthopedic surgeon was requested. As a result of this consultation a Calot jacket was applied; she was also wearing a brace on her right foot. No improvement was noticed.

Consultation with a third orthopedist was sought. This orthopedist endorsed the treatment as conducted.

In September, 1909, she was seen in consultation by Dr. R. H. Sayre. Her condition then is shown in Figures 10 and 11. Since her case was regarded as one that should receive aggressive treatment, she was turned over to me, at the hospital, where for three months traction was made on her extremities and head, with daily electricity and massage to her weakened muscles. This was followed by a plaster jacket and jury-mast.

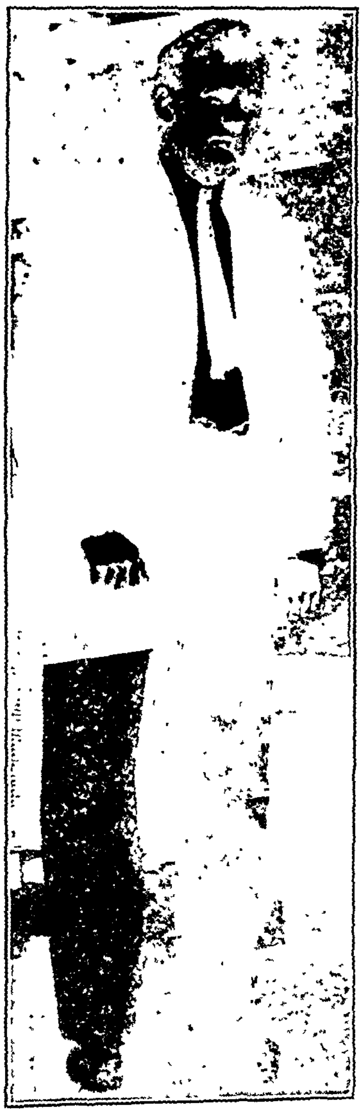


Fig. 14.—Case 8. Total paralysis 1½ years; recovery after 6 months' treatment with electricity, massage, etc.

Photographs taken one year later, as shown in Figures 12 and 13, show marked improvement, also demonstrate the fact, not accepted by many orthopedists, that in rotary lateral curvature, with bony deformity, much improvement can take place. A line drawn from the left nipple in the front, or from the angle of the scapula in the back, or following the crease of buttocks up, will bring out the change that has taken place.

Since these photographs have been taken, the patient has made decided improvement, but objects to having another

Case 8.—John D. R.: After a total paralysis lasting one and a half years, under the methods herein described, the patient obtained control of his legs and arms and is now able to get about, after four months' treatment.

Case 9.—George and Richard C., brothers, were afflicted with infantile paralysis during the summer of 1911 while in an isolated home at Glen Summit in the Pennsylvania mountains. The cases were referred to me by Dr. Charles Gilmore Kerley of New York. Richard, having a milder attack, made almost perfect recovery except the anterior and posterior tibialis, and peroneal in one leg. George had paralysis involving all the muscles of his body, and including thorax and vocal cords. One could distinguish his voice only by placing the ear to his mouth.

I am simply reporting this case to show that treatment continued for several years will bring about progressive improvement, for since the paralysis, the patient has gradually regained control of one group of muscles after the other, and although he still has light braces to aid his leg motions, he is able to go about without them.

The case also demonstrates the danger of permitting nurses and others not familiar with the care of these cases and the value of confining their efforts to the weaker muscles, to instruct the patient in the general setting-up exercises. For a period of over two years, George gave no evidence of spinal curvature or rotation. The case was turned over to a nurse who devoted her efforts to develop both sides, with the results that the stronger side was developed so much quicker than the weaker side that after a period of a few months a very decided lateral curvature was developed, which it will be difficult to correct.

Case 10.—Harry H., patient of Dr. Eagen of Brooklyn, had infantile paralysis involving all the muscles of the body, and under treatment of massage and electricity, made a perfect recovery of his arms and legs. His erector spinae muscles were so extensively involved that a right high dorsal lateral curvature developed. Under special care by devoting all the efforts to the weaker muscles, by electricity, massage and more particularly muscle education, this lateral curvature has been corrected.

I am simply calling attention to the preceding case to show that when all efforts are directed toward the weaker muscles and the stronger ones are allowed to atrophy, a muscle balance can be developed, but when bilateral exercises are attempted we have deformity in the limbs and lateral curvature develops in cases in which the spinal muscles are involved.

783 Lexington Avenue.

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# THE PRACTICAL IMPORTANCE OF INFANTILE KIDNEY IN RENAL DIAGNOSIS *

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AND

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The different varieties of kidney anomalies have been so thoroughly catalogued, and the classification so often repeated by various authorities, that the profession has come to be more or less conversant with their existence.

We wish to describe here a type of kidney not usually included in these classifications, which, when present, is of vital importance to the surgeon, as it may easily pass unrecognized if ordinary methods of examination are used. The particular anomaly to which we refer is the condition in which a large, hypertrophied kidney exists on one side and an infantile kidney on the other, the

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* From the Genito-Urinary clinic of the Johns Hopkins Hospital.

urine from the deficient kidney, with all chemical and microscopic methods of diagnosis, appearing entirely normal. The concentrating power of the kidney is also normal. The quantity of urine secreted, however, is so small and the function so decreased, that this kidney alone may be insufficient for life. On examination, the kidney is normal in shape, color and consistency. On section, the general architecture is normal and microscopic examination shows normal tubules and glomeruli. It differs from the normal kidney in its diminutive size only. While a search of the literature reveals a comparatively small number of cases in which nephrectomy has been performed unwittingly on the larger kidney with disastrous results, the condition is, nevertheless, probably much more common than the number of reported cases would indicate.

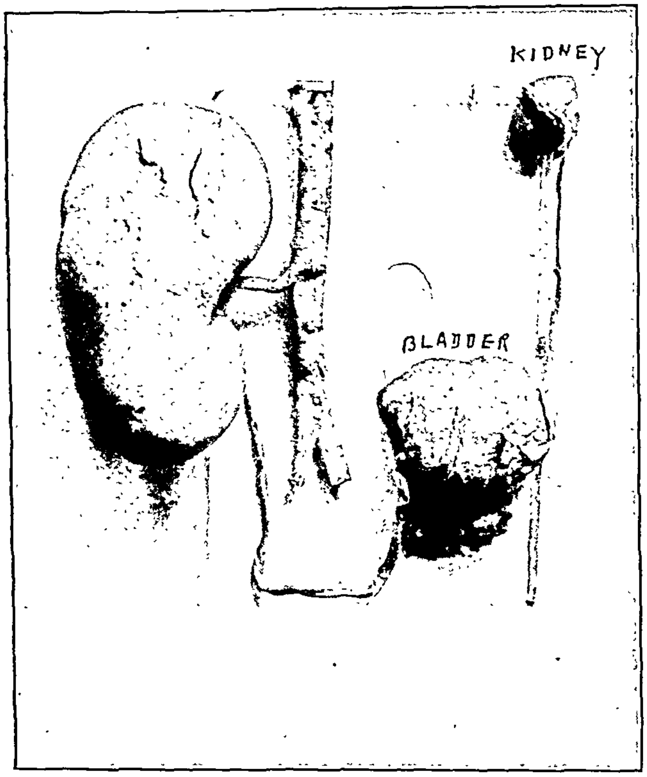

Fig. 1.—This kidney is an example of hypoplasia and the picture is inserted to show the contrast between hypoplasia and the infantile type.

Papin, in a very complete consideration of all possible kidney malformations, mentions briefly the type of organ to which reference is here made. He describes such an organ as secreting a urine, normal in every respect, except that the amount is very small. He mentions specifically that such a kidney may even have a high urea concentration. L. L. McArthur[1] reports a case in which he had performed nephrectomy for tuberculosis, which was followed by death from renal insufficiency and at necropsy a kidney, which he terms "infantile," was discovered. The ureters in this case had been catheterized previously and a perfectly clear, apparently normal urine obtained from the insufficient kidney. He also expresses the evident hopelessness of being able to diagnose this condition before operation.

The frequency in general of kidneys atrophic through various causes is seen from a study of 3,940 necropsies from the pathologic department of the Johns Hopkins Hospital. Among this number thirty-six cases of atrophy from various causes were found. Of these only six were unilateral, and of these six three belonged to the infantile type to be described. In this tabulation the moderate bilateral diminution in size found in some cases as a result of chronic nephritis was naturally omitted.

A study of statistics shows that there is excessively small probability of a person having only one kidney, the result of congenital absence or non-development. There is much greater risk of meeting with a deficient kidney of the infantile type. None of the statistics take into account those congenitally small or atrophied kidneys which weigh from 1 to 1½ ounces and which may possess some though not a full amount of glandular substance. Congenital aplasia and hypoplasia of extreme degree are practically the only types which are considered in the various classifications.

The material on which this study is based comprises three cases, obtained at necropsy in the pathologic department of the Johns Hopkins Hospital, one case from the Hunterian laboratory, two cases in which the condition was discovered at the operating table, and two cases diagnosed clinically as anomalies of this type.

Following is a description of the material on which our studies are based:

CASE 1.—Cat. In some experiments to determine how quickly the remaining kidney could take up the total function after nephrectomy, it was noted that the amount of urine decreased at once and the function dropped to one-fifth the previous amount, as tested by phenolsulphonephthalein.[2] This result was strikingly different from that in other experiments previously done, in which the remaining kidney almost immediately assumed a function equal to that of the two kidneys. The cause of the great decrease in function was revealed later by finding an extremely small kidney, which weighed only 6.4 gm. The kidney first removed weighed 26.4 gm. A careful microscopic and chemical examination of the urine from the small kidney revealed no abnormality.

The left kidney, the larger, measures 4 by 3.5 by 2.5 cm. The right kidney, the smaller, measures 2 by 2 by 1.25 cm. The capsules of the kidneys strip readily, leaving a smooth surface, on which nothing abnormal is to be seen. On section, the three zones of the kidney may be made out readily. The cortex. in the large kidney, measures 5 mm., and in the small kidney 2 mm., and nothing abnormal is to be seen in either case. Microscopically, the large kidney shows a histologic picture characteristic of the normally hypertrophied kidney. In

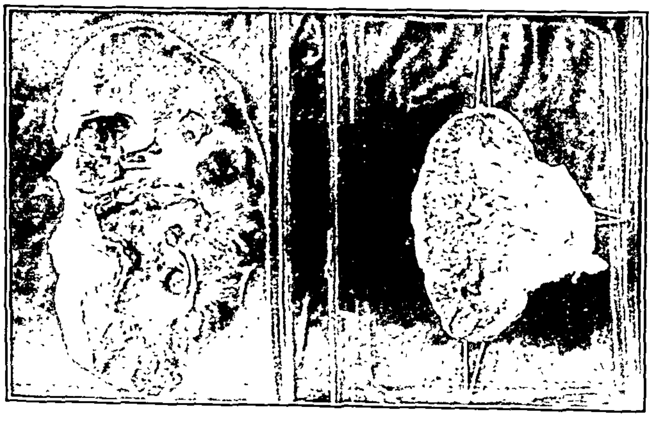

Fig. 2.—This is a kidney of the true infantile type. The section includes the lateral wall of the pelvis which gives the kidney the appearance of being hydronephrotic. It is unfortunate that the pyramids do not show in the photograph. With the naked eye the kidney is in every way normal.

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[1] McArthur, L. L.: Surg., Gynec. and Obst., 1911, xii, 391.

[2] Rowntree, L. G., and Geraghty, J. T.: The Phthalein Test; An Experimental and Clinical Study of Phenolsulphonephthalein in Relation to Renal Function in Health and Disease, Arch. Int. Med., March, 1912, p. 284.

the small kidney, the picture is quite different. Definite scars may be seen, radiating from the arcuate vessels to the surface. These scars appear to be associated with the interlobular blood-vessels. In the scarred areas the tubules are atrophic or entirely gone, while here and there hyaline glomeruli may be seen. In the intervening spaces, both the uriniferous tubules and the glomeruli are normal in appearance.

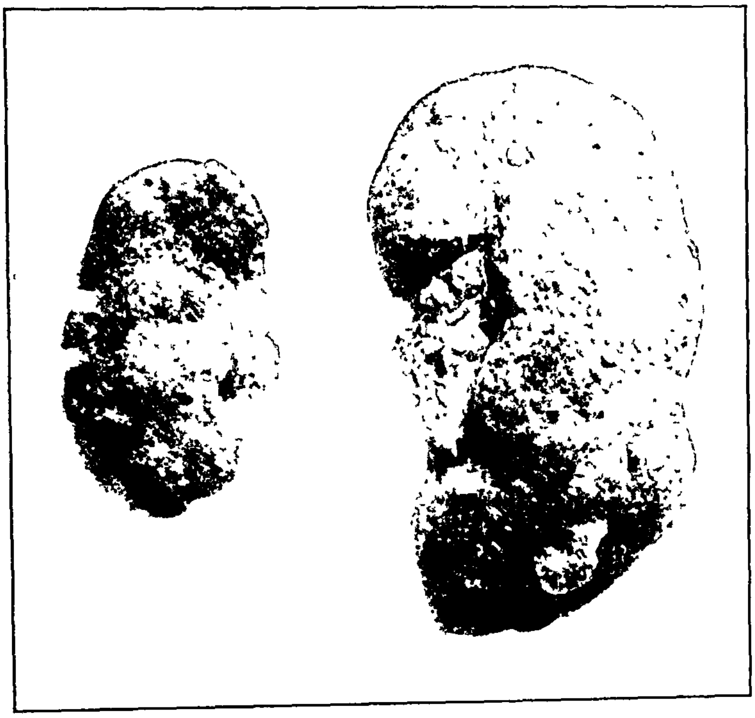

Fig. 3.—These are the kidneys described under Case 3.

Case 2 (Fig. 1).—Specimen in the Pathological Museum of the Johns Hopkins Hospital. The right kidney is enormously enlarged and measures 15 by 8 by 6 cm. The left kidney is extremely small and measures 3.5 by 2 by 0.75 cm. The capsules of both kidneys strip quite readily, leaving smooth surfaces. On section, the right kidney, aside from the huge size, shows nothing abnormal. The left kidney is very minute, and on section the architecture is partially obscured. Microscopically, sections from the right kidney show the usual findings in a kidney that has undergone compensatory hypertrophy.

Sections from the left kidney show that there is a minute amount of cortical tissue and only a few glomeruli are present The glomeruli that are present, however, are large and normal Associated with these glomeruli, and usually in their vicinity. are a number of normal convoluted tubules. The great mass of the kidney is composed of tubules, which look more like collecting than convoluted tubules.

Case 3. (Fig. 2).—*Diagnosis.*—Stricture of the left ureter and hydronephrosis of the left kidney; infantile kidney on the right.

M. T., woman, aged 48, admitted to the gynecological department of the Johns Hopkins Hospital (service Dr. H. A. Kelly), Nov. 13, 1912, with a history of attacks of pain in the left kidney region, accompanied by hematuria.

Examination showed a stricture at the lower end of the left ureter. The bladder urine was normal. Cystoscopic examination showed both ureteral orifices normally placed and normally functioning, the urine being perfectly clear. The patient refused treatment and left the hospital. Readmitted May 7, 1913, suffering with severe, acute nephritis, from which she died.

Necropsy No. 3935. The left kidney weighs 140 gm., and measures 10.5 by 5 by 3.5 cm.; the capsule strips readily and the surface shows a definite infarction and some small hemorrhages. The cortex varies from 1 to 2 mm. in width. On cross-section, the pelvis is markedly dilated, the dilatation involving the parenchyma and causing some pressure atrophy. The hydronephrosis was a result of adhesions (peri-ureteral) in the lower portion. The gross picture of an acute nephritis is also present.

The right kidney weighs 40 gm. and measures 5 by 2.75 by 1.25 cm. The cortex is 3 mm. in thickness. On gross examination, this kidney is apparently perfectly normal except for the changes, resulting from the acute nephritis present.

On microscopic examination the left kidney shows the usual picture of acute hemorrhagic nephritis, with added interstitial changes, the result of pressure atrophy. The right kidney, with the exception of the changes due to the acute nephritis, presents a picture of kidney tissue, normal in structure and architecture.

Case 4. (Fig. 3).—*Diagnosis.*—Chronic diffuse nephritis of left kidney; hydronephrosis and chronic nephritis in an infantile kidney on the right.

W. W., man, aged 70. Admitted Nov. 17, 1912, to Johns Hopkins Hospital, with hypertrophy of prostate. Death resulted from hemorrhage following prostatectomy.

*Necropsy.*—Right kidney measures 7 by 2.5 by 2.75 cm., and weighs 40 gm. The capsule strips readily, leaving a granular surface. Cortex is irregular in width, varying from 1 to 4 mm. The pelvis of the kidney is moderately dilated, but the papilli are not flattened. Microscopic section shows a moderate grade of chronic, diffuse nephritis, with a well-marked arteriosclerosis. The glomeruli are unimpaired, and the tubules are not replaced by fibrous tissue. The pathologic changes present in this kidney would not explain the diminutive size of the organ.

The left kidney measures 11 by 6.5 by 4 cm.; weight 180 gm. The capsule strips readily, leaving a granular surface. The cortex is irregular in depth and the pyramidal portion shows a definite increase in gray, translucent connective tissue. The pelvis is moderately dilated. The microscopic picture shows lesions similar to those on the opposite side.

Both of these kidneys are the seat of a typical, moderate grade arteriosclerosis, and the process is of about equal grade in each kidney.

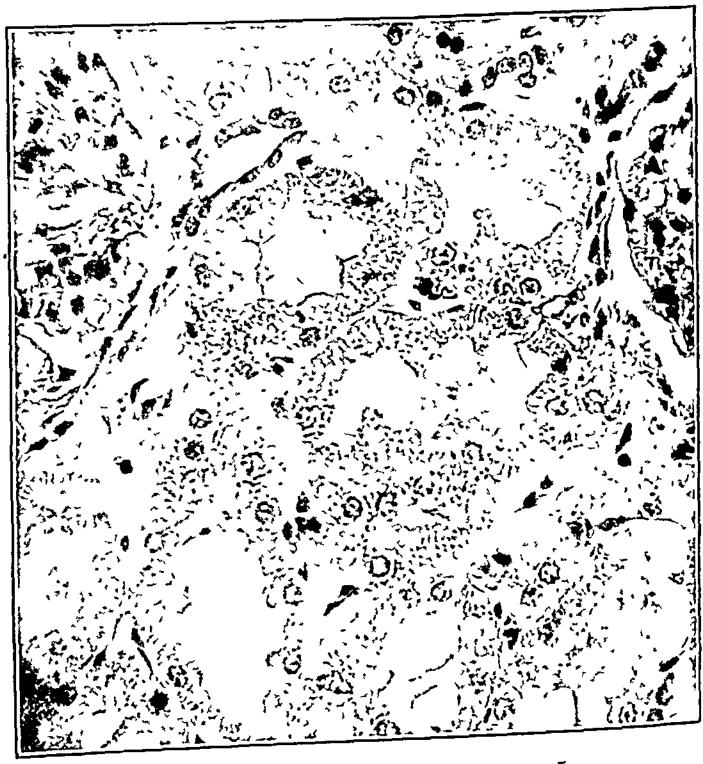

Fig. 4.—Microscopic section in Case 5.

Case 5. (Fig. 4).—*Diagnosis.*—Hypertrophy of left kidney, tuberculosis in an infantile right kidney.

T. C., man, aged 39. Admitted to Johns Hopkins Hospital May 16, 1910. The left ureter was readily catheterized, but on account of ulceration of the right ureteral orifice it was impossible to pass a catheter and the urine was collected transvesically for a period of one hour.

Results of examination:

| RIGHT KIDNEY | LEFT KIDNEY |
|---|---|
| 20 c.c. | 40 c.c. |
| Cloudy. | Clear. |
| Microscopic pus and tubercle bacilli. | Microscopically negative. |
| Specific gravity, 1.016. | Specific gravity, 1.020. |
| Urea, 1.7 per cent. | Urea, 2.8 per cent. |
| Phenolsulphonephthalein, approximate time, eighteen minutes. | Phenolsulphonephthalein, approximate time, four minutes. |
| Excretion, a trace. | Excretion, 44.4 per cent. |

At operation a small right kidney was found and removed by Dr. H. H. Young. The kidney measured 7 by 2.5 by 3.5 cm., and weighed 40 gm. The surface appeared normal, capsule was not adherent and the color was good. On palpation, the upper third seemed softer than usual, but the consistency of the remainder of the organ was firm. On section, the upper third of the kidney showed well-marked tuberculosis, between the pyramids and the cortex, with small cavity formations. The macroscopic appearance of the lower two-thirds is normal.

Microscopic examination of the kidney tissue in the lower two-thirds shows a slight diffuse increase in connective tissue, manifest about the glomerular capsule. The tubular epithelium is somewhat swollen and the general architecture is slightly blurred. In the non-tuberculous portion the pathologic changes present are extremely minute.

It is very evident that if, in this case, the disease had been in the hypertrophied left kidney, instead of in the infantile kidney, nephrectomy, if performed, would probably have resulted in death. The deficiency in this right kidney could not have been recognized, except through a functional estimation.

Case 6.—*Diagnosis.*—Tuberculosis of the right kidney; infantile left kidney.

W. B. S., man, aged 30. Admitted to the Church Home and Infirmary February, 1911, with a history of urinary symptoms of two years' duration. Tubercle bacilli were demonstrated in the urine. The prostate, seminal vesicles and epididymes were normal. The bladder was so contracted that ureteral catheterization was unsuccessful. The total renal function, estimated by phenolsulphonephthalein, showed an excretion of 36 per cent. for one hour. The definite reduction in the total function suggested the possibility of a bilateral lesion. A double exploratory operation was advised. The left kidney was first exposed, and discovered to be about one-fourth the size of a normal kidney. In every other respect the organ seemed normal. There were no perirenal adhesions; the surface was smooth and the consistency normal. The ureter showed no thickening or induration suggestive of tuberculosis. In view of the reduced total renal function and the presence of an infantile kidney on the left, it seemed probable that tuberculosis was present on the opposite side. If the hypertrophied right kidney was tuberculous it was also evident that nephrectomy could not be performed, because of the deficient kidney on the left. Consequently, the right kidney was not explored.

The patient was seen again in April, 1913. His general health had been fairly well maintained. The urine was quite cloudy from pus and the total renal function, as estimated by phenolsulphonephthalein, showed an excretion of 25 per cent.

This is a decrease of 11 per cent. since the previous examination. It seems probable that the tuberculous process of the right kidney is causing a decrease of the total function, because of the inability of the left kidney to undergo compensatory hypertrophy.

Case 7.—*Diagnosis.*—Tuberculosis of the right kidney; infantile left kidney.

Man, aged 27, admitted with urinary symptoms of ten months' duration. Tubercle bacilli were found in the urine. Catheterization of the ureters and estimation of function, the urine being collected for one-half hour, gave the following results:

| RIGHT KIDNEY | LEFT KIDNEY |
|---|---|
| 80 c.c. | 4 c.c. |
| Cloudy. | Clear. |
| Microscopically, pus and many tubercle bacilli. | Microscopically, negative. |
| Phenolsulphonephthalein, approximate time, five minutes. | Phenolsulphonephthalein, approximate time, ten minutes. |
| Excretion, 30 per cent. for one-half hour. | Excretion, 8 per cent. for one-half hour. |

In order to confirm the preceding findings, catheterization was repeated later with almost identical results. The total function, as estimated by phenolsulphonephthalein, showed an excretion of 35 per cent. for one hour, following intramuscular injection. Examination by Roentgen ray was negative for stone, but showed a kidney shadow in the left side, not quite half so large as the shadow on the right.

The normal character and color of the urine, the small amount secreted on the left side, the relatively high urea concentration and the small kidney shadow make the diagnosis of infantile kidney probable. Furthermore, the right kidney, although definitely tuberculous, still retained a function equal to or even greater than that of a perfectly normal kidney, which indicates that, previous to the onset of disease in this kidney, it was hypertrophic.

Case 8.—*Diagnosis.*—Double ureter and pelvis with hematuria on right side; infantile kidney on the left side. First seen August, 1912. Following a severe blow over the region of the right kidney the patient noticed blood in his urine which continued up to the time of the examination. The urine is of a distinct wine color, and, on cystoscopic examination, a stream of bloody urine is seen issuing from the right ureter. Catheterization of the ureters was performed and functional estimation made by means of phenolsulphonephthalein, the urine being collected for one-half hour.

Results of examination as follows:

| RIGHT KIDNEY | LEFT KIDNEY |
|---|---|
| Function free and rapid. | Function slow; about one-eighth the amount of that on right. |
| Bloody. | Clear, good color. |
| Microscopically, negative, except for red blood-cells. | Microscopically, negative. |
| Urea, 1.2 per cent. | Urea, 1.2 per cent. |
| Phenolsulphonephthalein, approximate time, five minutes. | Phenolsulphonephthalein, approximate time, five minutes. |
| Excretion, 35 per cent. for one-half hour. | Excretion, 4 per cent. for one-half hour. |

The preceding examinations were repeated three times, with practically identical findings on each occasion. Pyelography, using 15 per cent. collargol, showed, on the right side, a double ureter extending from the crest of the ilium and ending in two apparently normal pelves rather widely separated. Injection of 7 c.c. into the left kidney pelvis produced definite pain and pyelography showed an irregular, small, indefinite pelvis. Estimation of the total renal function was normal, there being an excretion of 50 per cent. for one hour, following intramuscular injection of phenolsulphonephthalein.

In this case, on the right side, which is the source of the hematuria, there are two separate kidneys, or more probably, a large bifid kidney, which has seven-eighths the total function. On the left side there is a kidney which secretes a urine small in amount, microscopically and chemically normal, and with a high urea concentration, which is equal to that of the right kidney. The function, however, is so low that it is extremely improbable that it could maintain life. The practical importance of recognizing the deficient kidney in this case needs no comment.

Of the eight cases described, a histologic study of the kidneys was made in five. In one case, the kidney was discovered on exploration, but no tissue was obtained for microscopic study. In two of the cases, a clinical diagnosis of the condition was made, but no exploratory opertion was performed.

A histologic study of the first two cases shows definitely the presence of pathologic changes. Over considerable areas there is an entire absence of tubules and glomeruli, these areas being represented by fibrous tissue. In other areas one finds perfectly normal tubules and glomeruli which could undoubtedly secrete a urine which is normal in general character. The changes present do not seem to be typical of secondary atrophy. The cause of the diminutive size in these two cases lacks definite explanation, although it seems probable that the changes are the result of prenatal disturbance. The kidney in Case 2 approaches true hypoplasia, and does not properly belong to the class of infantile kidneys, but has been included here because the normal tubules and glomeruli present could have secreted a urine normal in character and would offer the same difficulty in diagnosis, commonly present in infantile kidney.

In Case 3, the small kidney was normal in its general architecture, and the histologic changes present were only those of an acute nephritis. This kidney may properly be termed infantile because although the organ is diminutive in size, the architecture is normal.

In Case 4, both kidneys are the seat of a moderate grade of hydronephrosis as the result of back-pressure from the enlarged prostate and there is present also, in equal degree on each side, a moderate grade of chronic diffuse nephritis. The marked difference in the weight and size of the kidneys cannot be explained satisfactorily as being secondary to this evident pathologic process present in each kidney, as the amount of disease present would not explain the marked diminution in size on the right.

It seems probable that this discrepancy in the size of the two kidneys existed before the onset of the present pathologic process, because the left kidney, although the seat of chronic inflammatory changes, has a weight in excess of normal. This enlargement of the left kidney must have occurred before the onset of the present bilateral affection, for a kidney which has present in it a diffuse pathologic process does not undergo compensatory hypertrophy. Here the small kidney belongs to the infantile type and the diminutive size is not the result of secondary atrophy.

In Case 5, the tuberculous process was present in the upper pole, the remainder of the kidney being perfectly normal in architecture and general appearance. This kidney also belongs to the infantile type in that, although diminutive in size, the renal substance is entirely normal, except for occasional minute changes about the glomeruli. The smallness of the organ in this case is not the result of the tuberculous process, but the tuberculosis has occurred in a kidney congenitally small.

These five cases fall into two groups. In the first group, to which Cases 1 and 2 belong, a small kidney is present, which secretes a normal urine, but which is not truly infantile, in that the histology is far from normal. In the other class, under which Cases 3, 4 and 5 are grouped, the kidneys may truly be termed infantile in type. Of course the differentiation between these two types is of comparatively little practical importance to the operating surgeon, as the two present the same element of danger, in that they secrete a normal urine, but are deficient in function.

In two of these cases tuberculosis was present in the large, hypertrophied kidney, and in one the disease occurred in the infantile kidney. In a case like the last mentioned, the presence of this type of kidney cannot be diagnosticated with the present methods of examination. This, however, is of no practical importance. The danger to the surgeon of the infantile type of kidney is well illustrated by these two cases, in which the disease occurred in the larger hypertrophied kidney, and the presence of the deficient kidney on the opposite side can be detected by functional estimation only.

It is rather striking that the four infantile kidneys in which the weight was obtained were, in every instance, one-fourth the weight of the normal kidney. The three kidneys from man each weighed 40 gm. The uniformity in size and weight is noteworthy, and it is possible, that there may be an embryologic explanation of the condition. It seems quite apparent that these kidneys have not the power of compensatory hypertrophy, for with the decreasing function in the hypertrophic kidney, due to disease, there is apparently no attempt on the part of the infantile kidney to make up the deficiency.

## CONCLUSIONS

The diagnostic points in determining the presence of a kidney of the type presented above, may be summed up briefly as follows:

1. When disease is present in the larger, hypertrophied kidney, the total function, as estimated by phenolsulphonephthalein, is decreased, and the function of the diseased kidney is usually greater than the function of the supposedly healthy kidney.
2. The function of the infantile kidney shows marked decrease, although the urea percentage and general character of the urine is normal, while the amount of urine secreted is relatively small.
3. Pyelography is of doubtful value, since the size of the kidney pelvis is usually not a reliable index of the size of the kidney.
4. In persons not too stout it may be possible to secure Roentgen-ray shadows, showing the presence of a diminutive kidney. In Case 7 considerable diagnostic help was obtained from the Roentgen ray, which showed a very small kidney shadow, less than half that of the opposite side. This, taken in conjunction with the functional findings and the character of the urine, was of considerable diagnostic aid.

In conclusion, it may be emphasized that kidneys of the infantile type are a menace to the surgeon if the opposite kidney is the seat of the disease. The character of the urine may be normal in appearance and the urea concentration or percentage may be high. The recognition of this anomaly may be extremely difficult, and its presence can be suspected only when function estimations are carried out.

We are greatly indebted to Dr. H. H. Young for the opportunity of studying two of the cases here cited, and to Dr. A. Keidel for the privilege of studying Case 8.

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**Presence or Absence of Hydrochloric Acid in Gastric Contents.**—It has been the experience of T. Gillman Moorhead (Dublin *Jour. Med. Sc.*, Oct. 1, 1913) that HCl is *almost* invariably absent in the vomited matter in cases of acute dyspepsia and in many chronic disorders of the stomach; also it is found subsequently to be present in a test meal washed out in the usual way. Frequently vomited matter is intensely acid to litmus paper, but as a rule this will be found due *to* the presence of organic acids. The explanation is that in acute troubles gastric secretion is presumably inhibited, abnormal fermentation takes place, and hence the absence of HCl and the presence of organic acids.

# HELIOTHERAPY WITH SPECIAL REFERENCE TO THE WORK OF DR. ROLLIER AT LEYSIN *

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If we open our school text-books on materia medica and therapeutics we shall rarely find any mention made of the qualities or therapeutic uses of solar energy. We learn the properties and supposed uses of scores of drugs and yet when we enter on practice, we find that our reliable therapeutic armamentarium is really a limited one. Water, fresh air and that most powerful agent of all, solar energy, which is supplied to us everywhere, receive only secondary consideration. The study and use of light, both artificial and solar, however, following the excellent work of Finsen, have come into prominence.

The use of light as a therapeutic agent is very old. C. E. Rogers tells us that some years ago, while traveling in the tropics of Central America, he observed a peculiar custom among some of the Indian tribes. Occasionally he would see one lying naked on the ground for hours at a time in the fierce rays of the midday sun. He learned that this was their method of treating consumption and rheumatism. The custom is an old one, having been practiced before the Spanish invasion and can be traced all along the western coast of the South and North American continents. In the Old World Herodotus as early as 484 B. C. describes the sun-bath, and the Romans built solaria on their houses for the purpose of utilizing the sun's rays. It is then lost sight of therapeutically until toward the end of the eighteenth century, when it was used to treat cancerous ulcerations.

Finsen by his great work established many scientific facts and again brought the subject prominently before the medical profession, and established it as a clinical method. The French school under Bonnet and the surgeons Ollier and Poncet of Lyon observed and reported the good effects of heliotherapy in chronic joint-affections. The application of the method was at this time confined principally to the warm sunny climate along the Mediterranean, until Bernhard of Samaden, Switzerland, began using it on the high plateau of Graubunden. He first treated granulating wounds, and later extended its use to surgical tuberculosis and now gives the following indications for heliotherapy:

I. Wounds: (1) traumatic in which primary healing is not probable as in case of those caused by blasts or crushing injuries; (2) due to circulatory disturbances, as ulcus cruris, mal perforans; (3) burns and frostbites; (4) infected wounds.

II. Tuberculosis of the skin and serous membrane. Tuberculosis of the lymph-nodes, bones, joints and others.

III. Carcinoma of the skin.

IV. Specific ulcers with little tendency to heal.

V. Leukemia, pseudoleukemia, tuberculosis of larynx and lungs.

In 1903 Rollier established the first sanatorium for the systematic treatment of surgical tuberculosis at Leysin, Switzerland, and since then he has erected two more at the same place, so that he can now accommodate 450 patients. These sanatoriums are located respectively at altitudes of 1250, 1350 and 1500 meters (about 3800, 4100 and 4500 feet). Two hundred beds are reserved for children. It is his work, his method and his results that I wish to review.

Before discussing his technic and results, it may be well to mention some of the properties of light.

Light is a wave-like disturbance which passes out in all directions from a luminous object through an ethereal medium.

Waves of light are not all of the same wave length. The difference in length makes itself known to our eyes as color.

When the sun's rays pass through a prism they are dispersed or decomposed into several kinds of light, and this we call the visible solar spectrum in which it is customary to distinguish seven colors—red, orange, yellow, green, blue, indigo and violet. A sun-ray, therefore, is really a bundle of rays and these individual rays do not occur singly in nature.

The different colors of the spectrum then are due to difference in length of the light-rays. The red are the longest, the violet the shortest. Each light-ray has three properties, namely: (1) heat production, (2) light production, (3) a chemical action. The red rays are principally heat rays. Light is most intense in the yellow. The violet rays have principally a chemical action, and are often called actinic rays. On both sides of the visible spectrum are large fields which are invisible to the eye and therefore called the invisible spectrum, or area of the ultra-red and ultra-violet rays. The different rays of the spectrum and the invisible rays differ as to their absorbability and therefore in their action, as only those rays can produce an effect, which are absorbed.

### EFFECT OF LIGHT ON BACTERIA AND THEIR PRODUCTS

Downe and Blunt first showed that sunlight retards and inhibits the growth of bacteria. Dieudonné found that direct sunlight killed typhoid bacilli in one and one-half hours, daylight in eight hours, arc-light (800 candle-power) in eight hours and incandescent light in eleven hours. Arc-light is rich in ultraviolet rays. Tubercle bacilli are killed by the sun's rays in five hours at the seashore; in four hours at an altitude of 2,800 feet, and in three hours at an altitude of 5,000 feet. Diffuse light requires about double the time to produce this effect. This action is principally due to the chemical rays, though all rays have a bactericidal action. The ultraviolet rays also act on the ferments and toxins. Diphtheria toxin quickly loses its toxic property under the influence of these rays, while the antitoxin is less affected by them. Small-pox vaccine is but slightly altered by sunlight or diffuse light, but greatly so by ultraviolet light.

### ACTION OF LIGHT ON THE HUMAN BODY

This varies according to the intensity, the altitude and the individual. Sunlight in passing through the atmosphere to the earth loses a great deal of its energy, the loss depending on the position of the sun in the sky, the density of the air strata traversed and the amount of moisture and foreign matter in the air. The chemical rays show the greatest, the heat rays the smallest loss. The light intensity in the higher altitudes is much greater than in the lowlands, and this difference is particularly marked in winter. According to Dorno and Weber, Davos (altitude 5,000 feet) at noon in winter has four times the amount of light that Kiel (sea-level) has, while this difference is only half so great in summer. In about the same manner the volume of the ultraviolet rays increases with the increase in altitude. The difference in the ultraviolet ray's intensity in higher altitude in summer and winter, however, is comparatively small, while in the lowlands it is great. The effect of

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* Read by invitation before the Chicago Pediatric Society, May 26, 1913.

light on the body is not as yet fully understood, but we may say when the body is exposed to sunlight for a period of time there results: (1) increased pigmentation; (2) increased growth of hair; (3) increased metabolism; (4) increase in number of erythrocytes; (5) local hyperemia; (6) decrease in number of respirations; (7) increase in depth of individual respiratory act; (8) fall of blood-pressure, and (9) stimulation of nervous system.

Under the influence principally of the ultraviolet rays, pigmentation takes place on those parts of the body exposed. This is as a rule preceded by an erythema of varying intensity, according to the strength of the light. The pigmentation is characterized by an increase of the pigment granules in the epithelial cells, as well as in an increase in the number of chromatophoric cells, which are probably epithelial cells which have migrated into the connective tissue. This pigmentation by some is considered a protective process on the part of the body against the ultraviolet rays. Others hold that it transforms short-waved, chemical rays into long-waved rays, which have a deeper penetration. A combination of the two views is probably more nearly correct. It is very important in practice, as Rollier states that prognosis and rapidity of healing are as a rule proportionate to the degree of pigmentation. This pigment absorbs the violet rays, but not the red.

All rays of light penetrate the human body, the violet or chemical rays possessing this power to a less degree than the heat rays.

Lenkei says that only about a hundredth part of the light falling on the body penetrates it 0.5 cm., but some rays reach a depth of from 5 to 6 cm. That light penetrates the thickness of the hand is proved by the experiments of Oninus. When light penetrates the skin, practically all the chemical rays are absorbed by the blood. This is a striking fact and probably some day will help explain the good results of heliotherapy. When we consider that exposure to light causes a local hyperemia, the amount of energy absorbed by the blood must be enormous. Von Schlaffer has also shown that blood during exposures to light absorbs light energy, which, in the dark, it can again transfer to a photographic plate. Is it not possible, as he says, that it can also surrender this accumulated energy to the internal organs, and thereby influence their function and possibly pathologic processes? Rollier rarely sees acne or furunculosis on pigmented skins, and during an epidemic of German measles noticed that all the well-pigmented children were free from eruption and even in those wearing jackets the eruption only appeared on those parts of the body not exposed to the sun-bath.

### TECHNIC OF HELIOTHERAPY AS USED BY DR. ROLLIER

While the French surgeons and even Bernhard of Samaden at first relied principally on local exposures of the parts affected, Rollier considers a general exposure of the body as fundamental and the local exposures as only secondary in importance. The dry, invigorating air of the higher altitudes is also called to assist the solar energy. This it does by increasing the action of the skin, thus aiding elimination, drying up wounds when present and increasing the general tone of the body. The treatment then is really a combination of light and fresh air. When light is not available the air-bath is used alone. According to Saake, mountain air also contains many more radio-active emanations than the air in the lowlands. Furthermore, in higher altitudes the differences in temperature in the shade and in the sun are very great, so that at Leyson when there is snow on the ground, temperatures of 95 to 120 F. in the sun are not uncommon. This allows the treatment to be carried on without interruption in winter, as the patients do not suffer from the cold.

Rollier in his address before the Gesellschaft deutscher Naturforscher and Aerzte in Münster in 1912 says:

> It is in surgical tuberculosis that we have seen the best results from heliotherapy, and we have made the treatment of it our life work. As a result of my experience in the use of the light-cure in higher altitudes, based on an experience of nine years, I maintain to-day that the cure of surgical tuberculosis in all its forms, in all stages, as well as at every age of life, can be accomplished.
>
> The closed surgical tuberculosis always heals, if one will only be patient, and above all if one understands how to keep it closed. To transform a closed tuberculosis into an open one means to increase the gravity of the case a hundredfold. A diminution of the vitality of the tissues is the inevitable consequence. . . . To regard a surgical tuberculosis as a local disease which can be cured by local treatment alone is a ruinous error. On the contrary, it is a general affection which requires general treatment. Of all infectious diseases it is the one in which the individual resistance plays a deciding part. Our first effort therefore is directed to improve general conditions and thus to bring about a healing of the local focus by treatment of the entire system. A rational local treatment is necessary as well, provided it is not too one-sided.

Patients on arriving at the sanatorium are put to bed for a few days, even those whose local condition does not make this imperative. They are thus allowed to become acclimated to the altitude. After three or five days as a rule, they are pushed out onto the verandas into the sunshine. The head is covered with a white hat or an umbrella, the eyes protected with dark glasses and a white garment worn over the body. On the first day the feet are exposed three times a day for five minutes; on the second day three times ten minutes, and the legs to the knees three times five minutes; on the third day the exposures are increased five minutes three times daily; on the fourth day thighs are included; on the fifth day the arms; on the sixth day the back and on the seventh the abdomen and chest, so that at the end of the first week some parts of the body are exposed for one and one-half hours per day. The exposures are increased five minutes three times daily until the patient gets a full sun-bath for from three to five hours daily. This, as a rule, is the maximum, although some bear the treatment for seven hours. Individualization of course is necessary, and in some instances the scheme of exposures must be modified to suit the case. Pulse and temperature are closely watched and used as an indicator of the patient's tolerance.

By this progressive increase of the time of exposure he avoids an erythema solare, and gradually the body acquires the desired degree of pigmentation which seems to be so essential. The rapidity and degree of pigmentation are as a rule in direct proportion to the power of resistance of the patient. Blonds and especially red blonds who pigment less seem to offer a more unfavorable prognosis.

Nervous patients must be treated carefully as they often complain of headaches and nervous symptoms. These restless, excitable patients receive more air-baths and shorter exposures to the sun, while the fat phlegmatic patients generally bear the sun-baths well.

As the healing of surgical tuberculosis requires rest of the parts affected, all cases except those of the upper extremities and lymph-nodes must be treated in bed. We must immobilize the parts. It the case of the upper extremities this is done with splints and bandages, which are removed during the exposure period.

Cases of tuberculosis of the hip, spine, lower extremities and peritoneum require immobilization in bed until healed; that is, until long after all pain has ceased and roentgenoscopy shows that the focus is healed. This, however, requires months and often a year or more. It is in cases of long duration particularly that we observe the better effects of treatment carried on in high altitudes over those in lower altitudes, for the former patients owing to the invigorating action of the mountain air, retain a good appetite, and with a good diet often take on weight. Not only that, but an increased tonus of the tissues, especially in children, is frequently seen. At lower altitudes loss of appetite and the depressing action of the heat interfere with the systematic treatment.

Rollier has discarded the use of all non-removable appliances for immobilization as antagonistic to the principles of heliotherapy. By their use, no matter how skilfully made, the activity of the skin is greatly reduced; exposure to sun and air is impossible, metabolism decreases and atrophy results. These factors tend to prevent healing and if healing does take place, the functional result is, in many cases, a poor one. All appliances for immobilization are therefore removed daily during the period of exposure, except occasionally in the case of very refractory children with spondylitis. In these cases he cuts large fenestra into the jackets. In general he applies extension apparatus, splints, bandages and removable corsets of celluloid. In many cases of spondylitis, a corset or jacket made of heavy material, which is in turn fixed to the mattress, is employed. Ambulatory appliances usually made of celluloid, so that they can be removed and treatment continued at home, are used only after the tuberculosis is healed to protect the newly formed bone.

Medication is rarely resorted to; children, however, receive cod-liver oil.

Cold abcesses unless interfering mechanically are given ample time to become absorbed. This occurs in a fair percentage of cases. Under all circumstances the rupture of an abcess is to be prevented, as a mixed infection is practically unavoidable and makes the prognosis so much worse. If necessary, they are aspirated and injected with iodoform, 10 per cent., in oil or glycerin, to guard against mixed infection. This is done even daily if necessary; every means and effort are used to avoid spontaneous rupture. If the patient has or develops a sinus, it is covered, when not exposed to the sun, with an alcohol dressing to prevent infection as much as possible. Sinuses, no matter where located, when exposed to light, first show an increased secretion, then gradually dry up, the granulations become healthy and complete healing is frequently seen. According to Bernhard, the scars resulting are firmer, yet more elastic, than when heliotherapy is not employed, and consequently produce less contraction.

The high fever due to mixed infection drops, large open wounds and ulcerations heal with a minimum of deformity, and thickening of joint capsules and exudates are likewise absorbed in many cases.

Franzoni, an assistant of Rollier, has recently published an interesting article on the behavior of bone sequestra under the influence of light. As a rule from three to five months are required for a sequestrum to form and free itself from the surrounding tissues. Heliotherapy increases the speed of evolution of the sequestrum and causes its spontaneous expulsion. Rapid and firm healing follows. By this method, only the necessary portion of bone is eliminated, and no new wound surfaces are created, as in the case of sequestrotomy. Franzoni has observed that when cloudy days intervene a sequestrum near the surface has retracted deeper into the cavity, to be fully expelled after further exposure to the sun.

The analgesic effect of the sun's rays is seen in almost all cases. In rare cases the symptoms become exacerbated but soon abate, and all cases show a marked lessening and more frequently an absence of pain after a short period of treatment. This, in turn, helps the patient by allowing him plenty of rest and sleep, the exposure to the sun being conducive to sleep itself.

In many cases of joint tuberculosis he finds a far better functional result after the use of heliotherapy than experience with other methods would lead one to expect. This he considers as characteristic of the use of the sun and air treatment! Passive and active movements are not employed.

Bardenheuer, assistant to Rollier, in a study of the blood, gives the following data:

During from the first to the third day of treatment, the red corpuscles usually increase about 500,000, and the white 3,000, the maximum in increase being reached about the third day. The leukocyte count in closed cases runs about 10,000, in cases with mixed infection from 13,000 to 17,000. He has found that cases in which the maximum increase in erythrocytes requires much more than three days are those offering a poorer prognosis. When healing starts there is a slight decrease in the number of erythrocytes.

The application of the treatments to specific seats of the disease is in substance as follows:

### TREATMENT IN VARIOUS FORMS OF TUBERCULOSIS

*Spondylitis.*—These patients are put to bed and immobilized as mentioned before. Children, if they wear a jacket, have a large fenestrum cut anteriorly, as the vertebrae in children are not much further removed from the surface of the abdomen than from the back. A gibbus, if present, is padded with cotton or a pillow, or, more frequently, the patient is placed on the abdomen with a triangular pillow under the chest. This position increases lordosis, and prevents, or when present, decreases the gibbus. After healing is verified by roentgenoscopy, a celluloid corset is worn. These cases require from one to two years.

*Coxitis.*—An extension is applied in bed and the pelvis is elevated on a pillow, to expose the entire coxofemoral trochanteric region to the sun. At the same time this avoids contractures. Abscesses when not absorbed are aspirated. The treatment requires at least a year, but splendid functional results are obtained.

*Lymph-Nodes.*—Bronchial lymph-nodes, lymph-nodes of the neck, have yielded beautifully to this treatment. In some cases the lymph-nodes appear spontaneously. In others it becomes necessary to aspirate; but even when there are sinuses the end-results are good, and the scars as a rule less disfiguring than in operative cases, complicated by infection. The treatment is contiued from six months to two years.

*Tuberculosis of Peritoneum and Ileocecal Tuberculosis.*—Even in these cases, the prognosis as a rule is good. Under the influence of the sun and fresh air, the pain soon subsides, exudates in the abdomen become absorbed; large tumor masses in the ileocecal regions, which were declared inoperable by Roux, disappeared and healing took place.

*Genito-Urinary Tuberculosis.*—The principal effects of heliotherapy in these sad cases is the lessening of pain and the amelioration of distressing bladder symptoms.

Tuberculosis of the bones of the hands and feet offers an especially good prognosis.

Closed tuberculosis of the pelvic bones is amenable to this treatment, but a mixed infection in cases of sacroiliac tuberculosis makes the case practically a hopeless one.

Patients with a combined local tuberculosis and tuberculosis of the lungs often show a marked improvement of the condition of the lung. As Rollier, by his method, exposes the thorax last, he has seen no ill effects such as hemoptysis. He says that bad effects such as congestion of the head, nausea, apoplexy, etc., are seen only when the method is improperly used and we fail to individualize.

Rollier's results[1] have attracted attention the world over, and such men as Bardenheuer, von Eiselsberg, Escherich, Kocher and others have written enthusiastically about the work at Leysin. Bardenheuer, who had very radical views on the treatment of surgical tuberculosis, now rarely resorts to a resection. He says, "Resection of a joint is a mutilating operation compared to Rollier's results."

In endeavoring to explain the action of the sun and the air, we encounter difficult problems. Several theories have been advanced. I shall not repeat them, as they are not convincing. We must here again accept the clinical results and content ourselves with empiricism. The pigmentation of the skin, the energy imparted to the blood by the absorption of rays, and the hyperemia of the skin probably all play an important part.

Good results are also seen in cases treated in the lower altitudes, although it often becomes necessary to interrupt the treatment on account of extreme heat or cold. Bardenheuer has reported on thirty-five cases treated at Cologne and is well satisfied with his results. He found that old fistulas, postoperative fistulas and old resections with mixed infections ofter healed promptly after exposure. Furthermore he employed the treatment in cases with multiple lesions which from a surgical point of view offered little hope, and saw complete healing take place, so that to-day he is one of the most ardent advocates of the Rollier treatment.

The principal drawback to the Rollier method or any other method of heliotherapy is, and always will be, the length of time necessary to obtain results, painstaking systematic work extending over months and years being necessary.

We must not lose sight of the fact, however, that when the ordinary orthopedic treatment is carried out a great deal of time is required likewise, and frequently at the end a resection endangering life becomes necessary. Not until sanatoriums are provided and especially places where the poorer class may find aid will heliotherapy be a complete success.

In the United States we have an abundance of places which would fill every requirement. Climate, plenty of sunshine and altitude can be had in Colorado, Arizona, California, New Mexico and in many other states; but in addition to this is required financial aid for institutions and the patients. The action of the states would be important. So much has been said in recent years on the subject of conservation that the matter of conservation of human beings and restoring them to usefulness cannot be foreign to American thought and American economic policies. The expense of bringing those afflicted with surgical tuberculosis back to health would be less than the burden imposed on state and charities in caring for the lifelong cripples created by this disease.

Here in the establishment of sanatoriums along the lines indicated is a field for the action of the state or for a broad charity.

Then, too, we could follow the good advice of Rogers, who says, "The study of solar phenomena and their relation to health and disease should be pursued with interest, and solar energy turned to account in maintaining the one and combating the other."

In the preparation of this article free use has been made of the publications of Rollier, Witmer, Bardenheuer, Jesionek and Franzoni.

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# TREATMENT OF LOOSE TEETH DUE TO INFLAMMATORY DEGENERATION OF THE GUMS AND ALVEOLAR PROCESS *

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The disease of pyorrhea alveolaris, in spite of its name, is not always associated with a flow of pus from the infected tooth-sockets. As a matter of fact, pus does not appear in 25 per cent. of the cases. The main symptoms are inflammation of the peridental membrane, bleeding of the gums at the slightest touch and a tendency for the teeth to elongate and be sensitive to mastication. Finally, the gums separate from the roots of the teeth, forming pockets in which salivary calculus and infection cause such centers of irritation and disintegration that the destruction of the teeth involved is only a question of time unless the tartar is removed from the roots, the mass of infection destroyed and the gums stimulated to reattach themselves to the roots of the teeth.

A single blind fistula from an infected root may cause the most profound nervous depression, which, being chronic, will be recognized only by its disappearance with the cure of fistula.

Osler, Goadby, Daland, Hunter and Billings, I believe, have not overstated the bodily ailments that time will show to be directly traced to mouth infections. That mouth infection is, in a great majority of cases, associated with Bright's disease, diabetes, cardiac, hepatic, renal and stomach disorders has been noted for a long time, but within recent years it has been shown that these disorders are, in many instances, ameliorated and, at times, entirely eradicated by the removal of the infecting foci from the mouth. My experience in the treatment of pyorrhea alveolaris with its associated tooth infections accords with these findings.

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[1] Rollier (Verhan l. d. Gesellsch. f. Kinderheilk. d. 84 Versamml. d. Gesellsch. d utsch. Naturforsch. u. Aerzte in Münster) publishes a report of 6 0 cases in which 355 patients were adults and 295 children. Ther were 450 cases of closed surgical tuberculosis and 200 cases of open surgical tuberculosis. In the cases of closed surgical tubercu sis 393 patients were cured, 41 improved, 11 remained stationary, nd 5 died. Of the patients with open surgical tuberculosis, 137 were cured, 29 improved, 14 remained

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space, this article is abbreviated in The Journal. The complete article appears in the Transactions of the Section and in the author's reprints.

The development of medical science has now placed on the dentist not only primarily the repair and restoration of the teeth that they may look well and give efficient power of mastication, but the responsibility of deciding whether or not patients shall be inflicted with a long list of diseases that owe their origin and existence to infections within the teeth and the adjacent tissues. This question of autotoxemia has been a great shock to the prejudice of the medical world at large, but to the dental world, trained more along purely mechanical lines, with little or no bacterial knowledge, the question of autotoxemia is no less than revolutionary. It is as though cabin-boys had suddenly awakened to find that they had been steering the ships of the human fleet, without charts or knowledge of navigation, over rocks, whirlpools and mines, all the time blaming unavoidable fate for the death and disaster, when the wrecks, deaths and disasters were directly caused by their own well-meaning, blundering hands. The medical world at large cannot escape this indictment, but Dentistry, inasmuch as she recommends appliances and fixtures that cannot be cleansed, that obviously may cause and perpetuate toxemia, is overwhelmed by the contemplation of the long lists of preventable diseases and the gruesome toll of deaths that her well-meant efforts may have unwittingly occasioned. The manifestly undisputed fact that the removal of non-cleansable crowns and bridges have caused the rapid disappearance of heart murmurs, violent nervous derangements, duodenal ulcer, anemia, etc., is a convincing proof of what wholesale disease had been caused by the mechanical appliances now generally recommended.

When we come to pyorrhea and pyorrhea pockets, which the great majority of dentists class as incurable, we have come to the great divide, for those dentists who shall control and cure this great scourge shall take their places in the dentistry of the future, and those who neglect this important source of human disease shall be relegated to the spheres of those who unwisely attempted that which they were unfitted to accomplish; for the cure of pyorrhea alveolaris has been more or less successfully accomplished for the last fifteen or twenty years.

While, as previously stated, pyorrhea is associated with various disturbances of which it may be the primal and continuing cause, such as gout, Bright's disease, diabetes and cardiac, hepatic and renal disorders, such specific disease as syphilis, gonorrhea and tuberculosis, by their debilitating effect on the tissues of the mouth, may so lower the vitality of the gums that infections that otherwise would be repudiated, penetrate the peridental membrane and by a subtle toxemia still further depress the general vital forces. This infection having penetrated the gums, forms a small abscess that partly strips away the peridental membrane from the tooth-neck, forming a pocket, which once formed continues the disease even after the general systemic disorder may have been conquered. It is probable that some one of the numerous passing diseases, such as typhoid, measles, grip, or even a bad cold, has temporarily lowered the physical resistance of the gum tissue to the point of permitting the ever-present infection to penetrate and form the self-perpetuating pockets, thus leaving the pyorrhea to continue without apparent systemic cause.

If the systemic cause has passed and the pyorrhea has not created a new one, the disease may perhaps be successfully treated by local means and a permanent cure hoped for; but if the pyorrhea is associated with serious general disorder, local treatment, important as it is, can be held only as a palliative and must be supplemented by judicious systemic treatment. The most important systemic treatment in the cure of pyorrhea consists in the discriminating use of vaccines that will produce antibodies in the blood as supplementary adjuncts to the proper local treatment; and yet, important and valuable as the vaccine treatment unquestionably is, without the proper local treatment that removes infecting foci and stimulates the gums to heal and reattach themselves to the roots, vaccine treatment can only reduce the severity of the symptoms; it cannot effect a cure.

About seven years ago it was my good fortune to discover that commercial hydrofluoric acid would disintegrate tartar with no macroscopic action on either cementum or enamel of an extracted tooth. The poisonous action of this acid precluded its use as a therapeutic agent to be applied to the gums. Through an extensive series of experimentation it was proved that a 23 per cent. solution of ammonium bifluorid (an acid salt of hydrofluoric acid) will disintegrate the tartar on a tooth as readily as hydrofluoric acid itself and also leave the tooth apparently unsoftened. The following is a safe, practical method for its manufacture: Forty c.c. of commercial hydrofluoric acid should be placed in a wax bottle and 27 gm. of chemically pure ammonium carbonate slowly added, a small lump at a time, the bottle being closed after each addition to prevent undue escape of fumes. When this mixture is allowed to rest for twenty-four hours it is ready for use. The temperature of the mixture during manufacture should not exceed 60 degrees Fahrenheit. The solution of ammonium bifluorid thus obtained gives excellent therapeutic results. Any variation in the strength of the acid made by this method seems to be of no importance chemically.

The solution of ammonium bifluorid may be injected once or twice a week into pockets around loose teeth, but care must be taken not to inject it into fresh cuts, as such procedure will cause great pain. The patient should spit without rinsing the mouth with water, the saliva acting as a protection against irritation. After one or two injections the soreness and inflammation will largely disappear, and even the general symptoms of toxemia will sometimes be found to have abated. The tartar scale that could not be easily and painlessly removed at the first two treatments will now tend to be so loosened that its thorough removal by scalers will be easy for both patient and dentist. After four or five applications, one week apart, black scales that have escaped the instruments will sometimes be found floating loose in the pockets, so that they can readily be picked out; finally, the root will become as smooth as velvet to the touch of an instrument. When this stage has been reached it will be found that the scalers cannot be so deeply carried into the pyorrhea pockets as was easily possible in the beginning. To do so causes pain and a free flow of blood. This indicates that new granulations are forming, which should not be ruthlessly broken up either by instrumentation or by injection of the bifluorid into them. Once each week the solution should be allowed to flow gently into the pockets, a procedure which results in continuous healing and is not productive of pain. Careful exploration for tartar on the root within the pocket is always advisable. Reattachment of the gum to the root, however, can be accepted as assurance that that portion of the root has been thoroughly cleansed. The scaling in that place should then be discontinued, while the weekly applications of the bifluorid alone should be used. If, however, at the end of two or three months any of the pockets have not entirely healed they should be re-explored with scalers and the treatment repeated as for a new case, although by this time most of the original pockets will have disappeared, and where they existed the gums, with a slight contraction at the neck, will be found firmly adherent to the tooth. Teeth that have lost more than half of their gum attachment have become, under this treatment, firm and comfortable to the action of normal mastication.

Let us now consider some of the other means of local treatment in the cure of pyorrhea alveolaris. Loose teeth may be splinted together so as to give immobility, but this should always be done in such a manner as not to prevent thorough cleansing of the gum around their necks. Any malocclusion should be remedied so that loose teeth may be relieved of the excessive pressure of mastication due to thickening of the inflamed peridental membrane. When a pocket has approached an apical foramen near enough to infect the pulp, the pulp should be destroyed and the root canals thoroughly sterilized and filled. This should be especially looked to in the case of molars in which the pocket extends through the bifurcation and down to the tip of one of the roots. It is sometimes excellent practice to cut the crown midway through the grinding surface through the juncture of the roots, finally extracting the diseased root with its side to the crown. This exposes the other root or roots so that they can be filled and cleansed as easily as a bicuspid. With upper molars, if the palatal root is necrosed, this operation is most satisfactory as it leaves the mouth to all appearances unchanged, and works for greater stability and more rapid recovery by not forcing the remaining root or roots to stand more than their fair share of mastication.

An excellent mouth-wash for use at home consists of a saturated aqueous solution of sodium silicofluorid which amounts to a 0.61 per cent. solution. This, when held for a minute in the mouth, morning and evening, and freely swashed for at least a minute through the teeth is a great assistance in relieving inflammation of the gums. Like the bifluorid it seems to restrain the deposition of tartar on the teeth, except in about 1 per cent. of cases, in which it seems to increase it slightly. But even in these cases the gums heal promptly and the superficial deposit is easily removed from the teeth with brush and pumice. The disagreeable flavor of the solution can be disguised by adding an equal amount of sodium chlorid or a judicious quantity of aromatics.

An efficient tooth-powder that will liberate enough free oxygen to make from 40 to 50 drops of a 3 per cent. peroxid solution for every 10 grains used on the brush in the mouth is as follows:

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|---|---|
| Magnesium peroxid (200 mesh sieve) | 60 parts |
| Sodium perborate | 30 parts |
| Castile soap and flavoring | 10 parts |

This can be used morning and evening for brushing the teeth and should be swashed around the interstices for a full minute before being ejected from the mouth. Without thorough cleansing and brushing of teeth and gums morning and evening antiseptic washes will, however, be of no avail. Since the tooth-brush cannot cleanse between the teeth these surfaces should be swept free from bacterial deposits with floss-silk morning and evening, and the teeth and gums thoroughly brushed with strokes not less than an inch and a half long, and rotary wherever possible. The brush should be small, not over an inch and a half long, the bristles not over a quarter of an inch, and narrow, so that when the mouth is partly opened the brush can be placed between the ramus of the jaw and the third molars. Most brushing does not extend beyond the spring of the bristles, which instead of giving bristle friction merely pivots the bristles without cleansing. The upper and lower third molars more frequently decay and are subject to pyorrhea alveolaris simply because they are not cleansed. Structurally, they are not weaker than any other teeth. At each visit of a patient it is most essential that the necks of all the teeth be examined for bacterial plaques that may have been accumulating undisturbed since the last visit. The patient should be shown what movements of the brush are necessary for their removal, for a final test of a method of brushing the teeth and gums is, Does it clean away the bacterial plaques? Ninety-nine out of a hundred cleanly people never brush the thick bacterial plaques from their third molars, or, as a matter of fact, from half the other teeth, simply because they have never been taught how. Gums as well as teeth should be thoroughly brushed twice a day of all bacterial plaques. Observation on my patients proves that healthy gums are no more injured by vigorous brushing than is the skin adjacent to the finger-nails. Inflamed soft gums will unquestionably be made sore for the first week or two, but persistence on the part of the patient and assistance on the part of the dentist in touching up the sore spots with silver nitrate will soon strengthen the gums to almost any friction the tooth-brush can give them. The question of vigorous cleansing and massaging the gums with the brush is not only a question of removing external films of infection, but is also for the purpose of producing an auto-inoculation that will create antibodies in the blood for the purpose of combating the disease, a vigorous massage of the parts causing a local hyperemia, which enables the antibodies in the blood to come into more intimate contact with the infecting bacteria. This is a most important phase in the cure of pyorrhea and one that has not been sufficiently emphasized. The formation of antibodies for the cure of pyorrhea is a means of eradicating pyorrhea from the system. The auto-inoculation caused by vigorous gum brushing combined with the judicious use of carefully prepared vaccines have given results of a systemic improvement that are little less than marvelous.

Medical literature is so full of the reports on successful vaccine treatment for mouth infection that they cannot but convince the most skeptical that there must be value in the treatment. Goadby's work in this field is deserving of great credit Cummins[2] has published a recent article on this subject wherein Goadby's methods are followed. The work of Leary and his associates is more in accordance with modern bacteriologic methods, however, and their reports are more in accord with the bacterial findings of this paper.

About two years ago I began the vaccine treatment as an adjunct to my local pyorrhea treatment. I was decidedly skeptical because pyorrhea does not seem to be caused by a specific bacterium, but may be caused by any one of several species, or various combinations of these. Nevertheless, from the very start such increased improvement locally and systemically was obtained that the great value of the treatment could not be doubted. The results in almost every case showed a consistent healing of the pockets and a disappearance of infection from the gums. In about 50 per cent. of the cases there was a distinct improvement in the general physical condition, which, as before stated, being chronic was sometimes made more apparent by its absence than its presence. In the forty cases that are used as the basis of this report, the streptococcus, staphylococcus, *Bacillus influenzae*, pneumococcus, *Micrococcus catarrhalis*, diphtheroids, Friedländer bacillus and an occasional unidentified bacterium were used in the vaccines. The *Streptococcus viridans* appeared in about 25 per cent. of the cases. That the vaccines for pyorrhea alveolaris for forty cases contained such a consistent combination of similar germs for so many cases with so comparatively few unidentified strains may be partly due to the method used in collecting the specimens so as to exclude the incidental or extraneous flora of the mouth. My method will now be described.

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[2] Cummins, R. C.: Jour. Vaccine Therap., March, 1913, p. 59.

When the infected area appeared at the tip of a root in which the pulp had died and the root canal had been filled, the culture was always taken through the root canal, which was drilled out with a fine sterilized piano-wire drill until the end was nearly reached. The canal was then sterilized with phenol (carbolic acid), wiped dry with cotton and then blown out with hot air. When this had been accomplished and the tooth had been carefully guarded with a napkin to prevent infection from the mouth, another sterilized drill was passed down to the end and then plunged through the tip into the infected area. This was then streaked over the blood-agar in the ordinary manner. At times, however, the infected area appeared near the tip of a root or roots in which the pulps were alive. In this case the root-canal method of obtaining the specimen was not feasible, so the following method was substituted: The mucous membrane over the indurated infected spot was cocainized and a thin cautery plunged down to the bone. A sterilized bone-drill was then passed through the outer plate of the alveolar process and the patient dismissed for two days. On his return the opening in the gum, on being protected with a napkin, was cauterized with pure phenol and then wiped dry. Then the sterilized point of a small sterilized platinum-pointed glass syringe or platinum spear was inserted into the bony opening made previously by the drill, and a small drop of bloody fluid extracted, which with due care was transferred to the blood-agar medium. This material was supposed to contain the bacteria that had gathered for the purpose of preventing reorganization of the tissues.

To take a specimen from a pyorrhea pocket the following method was used: The neck of the tooth was first carefully washed with 95 per cent. alcohol so as to remove all outside bacteria as much as possible. The tooth was protected from mouth infection by a napkin, and then a small cup-shaped spear of thin platinum was heated to a cherry red and plunged to the bottom of the pocket. Such a procedure it was thought would get not only the pus but also a slight amount of blood from the walls of the cavity. It was thought that the hot platinum would kill any extraneous flora, while the cooled metal would carry to the blood-agar only the germs directly responsible for the disease in question. It must not be forgotten that pus is sometimes sterile, while the true cause of infection may lurk within the walls of the abscess from which the material is being obtained.

The vaccines were then made up so as to contain all the germs found, except the spore formers and the anaerobes that were not grown. While the bacteria of these classes may sometimes play a rôle in the infection the results of vaccine treatment indicate that in these cases their rôle is a minor one. The staphylococci were made to give 300 million to the cubic centimeter. Streptococci, diphtheroids, pneumococci, *Micrococcus catarrhalis, Bacillus influenzae* and unclassified bacteria were put in so that each would show 50 million to the cubic centimeter. In ordinary cases of chronic pyorrhea the initial dose is 75 million staphylococci and 12 million of each of the other bacteria, and the dose is steadily raised according to the reaction at the site of inoculation and the general systemic response. If the patient showed exceptional frailness or the inflammation was exceptionally acute, the initial dose was reduced to 37 million staphylococci and 6 million of each of the other bacteria. These doses were generally given a week apart in the arm, or, in thin patients, in the back.

I have not used the opsonic index in the treatment of pyorrhea alveolaris. I feel that clinical symptoms have been a sufficient guide. An interesting observation which I have not seen mentioned elsewhere is the occasional persistence of the induration which forms at the point of injection. It has appeared to me that this can be due only to a lack of digestion and absorption of the bacterial bodies. So long as the induration markedly persists we have an indication that the potentialities of the vaccine injection have not been exhausted. Therefore, further injections may be temporarily withheld or smaller doses given while absorption in the seats of induration is stimulated by massage. This method gives excellent results, and tends to minimize the danger pointed out by Allen,[3] when excessive reaction is caused by doses which may have been perfectly well borne on several previous occasions. As Allen says, however, it should always be borne in mind that, if the systemic reaction lasts over twenty-four hours, it is wise to increase the interval between the doses, and a larger dose should not be given especially if the patient makes good progress on the smaller dose.

If there is a tendency to the rapid formation of creamy tartar deposits on the teeth prior to vaccine treatment, it will be noted that, as the antibodies are formed and the gums show signs of healing, the tartar will be deposited much less rapidly and that the tartar deposited is of a more solid, removable nature and does not tend to burrow under the gum margins. This change in the deposition of tartar I have finally come to regard as a distinct symptom of the successful progress of the vaccine inoculations.

When a pyorrhea pocket shows sudden signs of inflammation during treatment it is always wise to open it surgically with a drill along the root to be sure that there is no back-pressure of pus, and that the antibodies have full opportunity to enter the seat of infection for the purpose of aiding in the cure; for above all things it should be remembered that the vaccine treatment can be successful only when accompanied by judicious local treatment of a surgical and therapeutic character. This applies to all foci of infection whether in the gums or in the impaction of a bowel or anywhere else in the system. It is imperative, therefore, that there should be sympathetic cooperation with the family physician, whose intimate knowledge of the patient and whose careful diagnosis of foci of infection other than those found in the mouth will greatly increase the percentage of successes and add to the permanence of the cures.

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[3] Allen: Vaccine Therapy and Opsonic Index, Blakiston, Philadelphia, 1913, p. 112.

Allen[3] speaks of the value of citric acid in 30-grain doses three times a day for the purpose of softening the lymph-wall around the foci of infection by reducing the agglutinative power of the blood. I have found this treatment of service, but give it in the form of an ounce of lemon juice three times a day, which is the equivalent of about 34 grains of citric acid.

I shall now report a few detailed cases.

Cases 1 and 2.—A young man with pronounced pyorrhea and several fistulas in the gums came to me so despondent that he thought he was going to die. Local treatment caused improvement, but two of the fistulas would not heal. An autogenous vaccine was made in March, 1912, from material obtained from the worst fistula. It contained only a single strain of streptococcus. After four injections, a week apart, the patient gained in weight and then started slowly to lose weight, but as he felt better and the gums improved, the treatment was continued until June, when there was a great improvement in the gums and both fistulas had healed. In the fall the patient returned and, as he and his family physician said that the vaccine had done him so much good, I made another vaccine from a small pyorrhea pocket and obtained four strains of streptococci and a *Staphylococcus aureus*. This treatment caused a complete healing of the mouth so that it was apparently absolutely healthy; the patient's skin cleared, he gained weight and felt, as he said, well. The mixed vaccine seemed most effective.

He begged me to give the vaccine treatment to his wife, who also was suffering from pyorrhea. She had almost the same experience, except that she did not gain weight (her weight was normal), but her mouth showed great improvement and she slept better and felt a great lessening of nerve tension.

Case 3.—A young woman was vaccinated with a Gram-negative bacillus, 50 million to the cubic centimeter, with some improvement, but not marked. Later a second vaccine was made of *Staphylococcus aureus* and *S. albus*. The gums showed marked improvement, but the soreness around two or three teeth still persisted; the skin generally, from being itchy and showing a tendency to pimples, cleared up and to her great delight remained sightly and comfortable.

Case 4.—Mrs. A., aged about 50, came to me with all the teeth loose, complaining of great fatigue, trouble with the eyes, constipation and a steady loss of weight. In six months the vaccine treatment had markedly tightened the teeth and her chronic fatigue and constipation were gone; the wrinkles vanished from her skin owing to an increase of weight from 115 to 127. Her eyes, she says, were so improved that she could readily read what before was impossible or accomplished with difficulty.

Case 5.—A married woman, aged 40, who had been under my local treatment for about two years took a vaccine last fall composed of a streptococcus. She had a complexion covered with red patches, gout in the right eye, hemoglobin 67 and great depression with constant fatigue. In six months the hemoglobin went up to 93, the gout disappeared from the eye, her complexion cleared and the gums made more progress than had previously been made in two years under local treatment. Her greatest satisfaction lay in the fact that she slept well, which prior to the vaccine had not been the case.

In three cases as the gums and abscesses healed marked redness of the nose disappeared. This was associated with great clearing of the complexion and a gain in weight. In other cases there was a consistent healing of the gums that seemed much more rapid than that usually obtained from local treatment alone, but with many of them the time is too short to be sure of a permanence in cure.

In one case that refused to yield either to local or

Such a depressing focus was obviously a sufficient reason for the poor results obtained, and as the patient refuses to have an operation the prognosis is not good.

Vaccine treatment judiciously used seems to be so valuable in the cases of pyorrhea that it should, in my opinion, always be given a fair trial and always in sympathetic cooperation with the family physician.

1500 Locust Street.

### ABSTRACT OF DISCUSSION

**Dr. Thomas B. Hartzell**, Minneapolis, Minn.: We sometimes cause deeper infection and greater disturbance, if treatment of the mouth is undertaken immediately prior to operation in other parts of the body. I am convinced that I have been responsible for bringing about two or three cases of pneumonia by disturbing areas of granulation tissue around teeth that needed care. Dr. Mayo, in a recent conversation, confirmed the idea that operative interference in mouths to clear them of bacteria immediately preceding great surgical operations, is an unsafe procedure. Treatment of the mouth should be accomplished by satisfactory measures two or three weeks before any extensive surgical operation is undertaken.

I believe that the bacterial vaccines should be used in conjunction with other measures, and that if used properly they have a vast field of usefulness.

**Dr. Thomas L. Gilmer**, Chicago: Referring to the benefit derived from antiseptic mouth-washes, I suspect that the mechanical cleansing of the teeth rather than the destruction of the bacteria by the medicament caused the improvement indicated. Bacteria are not destroyed by any germicide that I know of which is not also injurious to the mucosa of the mouth. Dr. Black recommends the use of a bulb-syringe with a moderately small nozzle for cleansing the interproximal spaces, especially when the gum septum is much destroyed by pyorrhea or otherwise. If considerable force is applied to the bulb, food and other debris is dislodged. This should be used only as an adjunct to the brush, silk floss and toothpick.

**Dr. C. H. Oakman**, Detroit: I am glad to know that those who spoke of vaccines do not hold to the use of vaccines alone, but believe in instrumentation. Dr. Head spoke about the use of peroxid of hydrogen. Three per cent. peroxid of hydrogen should not be condemned, but, as a rule, peroxid of hydrogen used in the mouth in stronger solution would be contra-indicated unless combined with lime-water or some other alkaline agent. I saw two patients in the hospital who were suffering from so-called rheumatism which involved principally the joints of the hands, wrists and elbows. Both had pyorrhea alveolaris combined with alveolar abscesses. One patient had been an invalid for several years. They were given pyorrhea treatment, which eliminated considerable of the infectious material; first stock vaccines and then autogenous vaccines were used with most excellent results. Within two weeks these patients showed marked improvement with regard to the mobility of the joints.

**Dr. L. Duncan Bulkley**, New York: I find the use of peroxid of hydrogen as a local remedy very satisfactory. I use it, first, in ordinary strength, increasing it, as necessary, even to full strength. I insist on slow and complete mastication, with some self-massage, as a means of promoting nutrition in the gums, and I am positive that all the cases in which this has been well carried out have been benefited, and the trouble has often been overcome. I never could see the sense in simply trying to relieve the trouble locally by cleaning out or disinfecting the socket of the tooth.

It is remarkable that the three or four places in the body that have the most micro-organisms—the scalp, the mouth, the scrotum and the vagina—are the places which yield best to surgical treatment. We all know how easily wounds in the mouth heal; wounds in the scalp are easiest to treat. There is something other than the simple action of organisms to be accounted for in pyorrhea, and we should always study the soil, or state of the system, on which they flourish; when this is in the best condition possible, a relatively small amount of local treatment acts efficiently.

Dr. Truman W. Brophy, Chicago: What has been said about infection would naturally make us extremely timid regarding operations in the mouth, if it were not for the facts that have been named by Dr. Bulkley. When one may operate in the mouth month after month without getting an infection, it impresses us with the feeling that, after all, these pathogenic micro-organisms are not so much to be dreaded as one would assume on general principles. We all know that we cannot remove them from the mouth by any kind of washing, irrigation or brushing; that they become imbedded in the mucosa in such a way often that their removal is absolutely impossible, and that even in the presence of pathogenic micro-organisms we do get good results without infection. We ought, however, to do everything in our power to make the parts as clean as possible. I think that it is wise, when possible, to irrigate the nose, mouth and pharynx prior to any operation in that field.

Dr. A. Parker Hitchens, Glenolden, Pa.: The discussion to-day indicates that we are at last getting away from the idea that bacterial vaccines alone can cure this infection. The reason we have local infections at all is because the bacteria have been assisted in some way to overcome the body's normal antibacterial forces. The assistance in pyorrhea comes through serumal calculi, tartar-plaques, foreign bodies and traumatism. The resulting inflammation apparently hinders the ready access of the normal curative substances in the blood and lymph to the organisms present. There is just about space enough between the cells constituting the inflammatory area for toxic substances to pass out into the tissues, but not sufficient room for antibacterial substances to get in; so that, even though the opsonic index is raised, no benefit results to the patient. The rational way, therefore, to treat an infection, the inception and continuance of which is facilitated by the presence of foreign irritating substances, is to remove the foreign bodies and possibly also the inflammatory tissue; in other words, local treatment must be resorted to.

Dr. Nelson T. Shields, New York: One point has been overlooked, and that is in regard to the saliva. After thorough prophylaxis and the removal of all the micro-organisms from the fermentation of food, you leave the mouth in a normal condition because the saliva counteracts all other acidity that forms when the saliva is normal. But for the saliva we would not have teeth very long.

A splint for holding loosening teeth should be so made that not only the saliva can circulate between the teeth just as well with the splint in place as without it, but also that the soft tissues will be protected. This is best done by extirpating the pulps from all teeth involved in the splint and, after thorough cleansing mechanically, asepsis being maintained, filling the canals with gold at their apices and with oxychlorid of zinc in the remaining portions. This being done the teeth can be prepared in such manner that the mechanism in the construction of the splint will allow the saliva to circulate between the teeth, which will keep the mouth normal. The extirpation of the pulps and canal-filling described will prevent the wasting of alveolar process and gums, which would certainly follow should this important point be overlooked.

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**Feeble-Mindedness.**—The importance of this problem is recognized in an instant when we learn that at the very lowest estimate 25 per cent. of our criminals belong to this class. Perhaps 50 per cent. of our prostitutes are feeble-minded girls; the same is true of our paupers, our drunkards, our ne'er-do-wells; in fact, we now recognize that a large percentage of the various classes of people who make our social problems are mentally defective. Twenty-five per cent. is a minimum estimate, while it has been shown that in all probability 50 per cent. is much nearer the truth, and it may run even higher. A superintendent of one reformatory for men estimates that 75 per cent. of his inmates are feeble-minded; careful tests of the girls in a reform school have shown 72 per cent. feeble-minded. In fact, wherever there are any statistics, it invariably points to the higher figure.—H. H. Goddard, in *Illinois Med. Jour.*

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# A CASE OF CONGENITAL MYOTONIA *

G. W. BOOT, M.D.
CHICAGO

Although the subject is outside my specialty, the rarity of the disease and the lack of knowledge concerning it justify me in reporting the following case:

*Family History.*—Patient's father is alive and well, active physically and mentally. The mother died of hemorrhage following some abdominal operation, at the age of 28. Father and mother were first cousins. Patient's father married again and none of the children by the second marriage are afflicted with the patient's disorder. The patient's paternal grandfather died at the age of 60 of spinal meningitis, and his paternal grandmother died aged about 35, from causes unknown to the patient. The maternal grandfather is alive and well, though slightly troubled with asthma, and the maternal grandmother died at the age of 55 from causes unknown to the patient. The patient's mother suffered from a disorder similar to his. This is shown by the disinclination she manifested toward going up and downstairs; the patient also finds this difficult and rather dangerous.

She had three children—all boys. The first died when about 8 years old and showed no signs of any similar trouble. The second child was 2 years older than this patient and manifested the same symptoms, having many falls as a child. He had an unusually active mind and studied hard in college subsequent to an attack of scarlatina. Following this he had a mental breakdown and was placed in a private sanitarium, where he died. The post-mortem examination which I made showed nothing externally beyond an unusually good muscular development and a few slight abrasions. At this time I knew nothing of his peculiar symptoms, so no muscle was removed for microscopic examination. When the skull was opened the calvarium was found thin and translucent in two places just outside the sagittal suture, about where it crosses the coronal suture. The dura was congested in those portions which corresponded to these areas, and was densely adherent to the deeper structures as well as the cortex. Except for this area of adhesion, the brain appeared normal. There was no fracture of the skull; the frontal sinuses and the temporal bones were normal. The lungs were found darker than usual. Over the upper lobe the right lung was adherent to the back of the chest, and the lower lobe adhered to the diaphragm, while the left lung was normal throughout. All the other thoracic and abdominal organs were found to be normal. Death had apparently occurred in a convulsion.

*Personal History.*—The patient, E. H., aged 21, is the youngest of the three children. His trouble began early in life. He remembers that at the age of 5 he had difficulty in arising from a sitting to an erect position, particularly if he had been sitting on the floor. His muscular trouble has caused him many falls. At the age of 12 he fell about 15 feet, struck on his head in the left temporal region, was unconscious for about twenty minutes, and after the fall could not see for about an hour. This was purely an accident and not the result of the myotonia. At the age of 14 he fell backward down the basement stairs, striking the back of his head on the cement floor, but was not injured. This fall was caused by loss of balance and inability to regain it on account of muscular spasm. At the age of 15 he fell forward on the same stairs. This time he fell like a log, toppling over with all his muscles rigid. He struck on his forehead and was unconscious for a short time, after which an abscess in the frontal region and many headaches developed. He has had chicken-pox, mumps and scarlatina, the latter at the age of 13.

*Present Condition.*—He has the typical state of myotonia, that is, when his muscles have rested and then are contracted, particularly if they are suddenly contracted, they are thrown into a tetanic condition, from which they do not relax promptly. If he rises from a chair after sitting for a short time his muscles contract and he cannot walk. Sometimes this condition of spasm will last for a minute or more. As a boy he could not take part in races or ordinary athletic games because he could not start quickly. When he got into fights he would always be thrashed before he could get into action. At one time he attended military school and found great difficulty in going through the prescribed tactics. After motion of the muscles is established he can move quite rapidly, but great resistance must be overcome before movement is secured. Going up and downstairs is perhaps the most difficult of all actions for the patient to perform, unless it is getting out of bed in the morning. After a night's rest he has much difficulty in rising. As his arms are less affected than his lower extremities, he first gains support on one elbow, then on the other, and so gradually gets control of muscle action. Cold weather has a marked influence for the worse on his condition. He tires more easily than ordinary persons, presumably because the spasm of the muscles causes more fatigue products to form, and in consequence he seems to require more sleep than the average individual. While the myotonia affects all the voluntary muscles to a greater or less degree, it is more marked in the lower extremities. It appears to be a true hypertrophy, for the muscles are firm and not soft or flabby. He must exercise extreme care when crossing busy streets, for if he were about to be run down by some vehicle he would be unable to move with sufficient speed to get out of the way. It is impossible for him to get on or off a street-car while it is in motion, partly because he cannot move quickly and still maintain his balance and partly because he cannot release the hand-rail promptly.

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* Presented before the Chicago Neurological Society, Feb. 20, 1913.

*Examination.*—The myotonia appears in the ciliary muscle to a slight extent, for he apparently experiences some slight difficulty of accommodation in looking at objects which are at different distances. If he looks steadily at a near object and then suddenly at a distant object there is a temporary blurring of vision. There is apparently a slight tardiness in response in the muscles of the eyelids. The myotonia is very marked in the masseter muscles. If he bites forcibly these muscles do not relax at once, but there is a considerable interval before he can open his mouth wide. No difficulty could be demonstrated in the muscles of the tympanum. The heart sounds are normal except that they appear rather loud. Any sudden alarm has a marked influence on the pulse-rate, increasing it greatly. The pulse-tracings show that exercise produces an unusual increase in the upstroke of the sphygmogram. "Stretching" causes a marked increase in the pulse-rate, but the blood-pressure is normal. Speech is rather hesitating. Whether or not this is due to an effort to get the muscles of speech in action I have not determined. It seems to me rather to be of mental origin. The diaphragm participates in the spasm, for after a strong exhalation in coughing or sneezing he cannot at once inhale. At times this causes dizziness. He has never become unconscious from spasm of the respiratory muscles. The deep reflexes cannot be elicited. I could find no jaw-jerk, elbow-jerk, wrist-jerk, knee-jerk or ankle-jerk. Light stroking of the abdomen elicited no response. The cremasteric and plantar reflexes are present. His troubles do not increase with age. No electrical tests have been made.

This case brings up several important problems for this young man. What are the chances of his transmitting this disorder to posterity if he were to marry? The condition of the sexual organs appears to be normal. Another problem concerns the occupation he must follow. Ordinary labor is out of the question, as he tires too easily and he cannot move quickly. The upper extremities being less involved than the lower, it seems to me that some occupation would be most suitable in which the chief muscular demands were made on the upper extremities. Also as regards life insurance, and in particular accident insurance, such an applicant would be a poor risk. Whether the disorder will shorten his life, except by accident, is problematic. What of his mental condition? Is there any danger of his becoming insane? His brother's affliction in this respect seemed to be closely connected with the results of the trauma he suffered to his head.

Among the questions of scientific interest that arise are the following: Where is the seat of the lesion or malformation causing this trouble? Is it in the nervous system or in the muscles? What is the relationship of this disorder to pseudohypertrophic muscular paralysis? Is the myotonia in any way related to tetany? Has it any connection with deficiency or perverted action of the secretion of the ductless glands? Does his metabolism differ from that of the ordinary individual?

122 South Michigan Avenue.

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# ENTEROLITHS

## REVIEW OF LITERATURE WITH REPORT OF CASE

Frederic D. H. Coerr, M.D., New York
*Assistant Visiting Surgeon, Fordham Hospital*

A tentative diagnosis of enterolith has probably been made frequently, only to be disproved at the time of operation. Conversely, most of the enteroliths reported have been discovered in exploratory laparotomies or on the post-mortem table.

The rarity of the condition is no reason for not bearing it in mind when endeavoring to determine the nature of some obscure abdominal condition, with or without intestinal obstruction.

It is self-evident that no classical picture can be drawn, as the signs and symptoms vary with the size, character and origin of the enterolith and its location in the alimentary tract, which may be anywhere from the stomach to the rectum. The diagnosis, therefore, is one which must be made chiefly by elimination, with the assistance of the laboratory and the Roentgen ray.

A positive, preoperative diagnosis may not be essential in all cases, but in some it would have prevented a fatal outcome, and in others saved years of distress and invalidism.

To stimulate a possible interest in this condition and to place on record one of these surgical curiosities, I submit the following brief review with the report of a case which I treated.

We are all more or less familiar with the hair-balls found in the stomach and intestines of the herbivora and in animals which have the habit of licking their coats, as well as the coats of their fellows. These frequently attain considerable size, and are composed of hair and husks, matted together with hard fecal matter. These are true enteroliths of fecal origin, and although common in animals, are rarely found in man.

Oriental bezoars[1] formerly, and possibly now, of medicinal use in certain countries, are intestinal concretions which probably were formed in *Capra aegarus* and *Antilope dorias*. They are usually spherical or oval, of a dark olive-green color, due to biliverdin, with a smooth, shining exterior, and composed almost entirely of lithofellic acid.

False bezoars, which come from the Eastern countries, have a brownish-black color, and are composed chiefly of ellagic acid, probably derived from the tannin contained in the food consumed by the animals which yield them.

Many foreign substances find their way into the human intestinal tract, but it is rare for any of them to form a nucleus of a concretion of sufficient size to cause intestinal obstruction, unless per chance it lodges in a Meckel's diverticulum or in some pouch of the intestines, as in the case reported by D. M. Greig,[2] in which the obstruction was relieved by the spontaneous evacuation, through an umbilical fistula, of an enterolith 2½ inches in circumference and weighing 24 gm. This may have been a true enterolith, but more probably it was a phosphatized gall-stone; since, judging from all the cases reported, gall-stones are found to be the most frequent cause of intestinal calculi in man. They may remain in the intestine for years, causing no trouble until, gradually increasing in size by accretion or being reinforced by accumulation of other stones, they give rise to symptoms of obstruction, either partial or complete.

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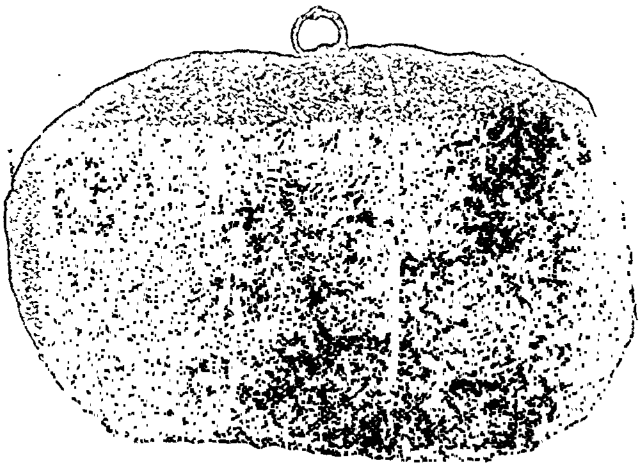
[1] Smith, E. E.: Reference Handbook of Medical Sciences, 1901, iii, 231.

[2] Greig, D. M.: Lancet, London, Dec. 3, 1910, p. 1613.

U. Gabbi[3] reports a case of this kind in a peasant, aged 45, who, one and one-half years after an attack of hepatic colic, was suddenly seized with a violent pain in the right inguinal region, followed by nausea and vomiting. The pain became rapidly more severe and generalized; the abdomen greatly distended, accompanied by tenesmus without evacuation. Temperature only slightly elevated and pulse accelerated. Purgatives and enema relieved the distention sufficiently to disclose in the region of the ileocecal valve a palpable, freely movable tumor with a hard nodular surface. Later, a hemorrhagic exudation occurred in the peritoneal and pleural cavities. This was removed by aspiration. Stools became normal, but urine contained much urobilin. Patient began to recover and left the hospital, but, according to his story, entire restoration to health came only after a chestnut-sized, whitish stone had been evacuated in a stool, followed by eight bean-sized stones and about fifty small stones.

According to Gabbi, the large number and small size of most of the evacuated stones exclude a diagnosis of enterolith of the feces. Since an attack of hepatic colic had previously occurred, it is probably that these gall-stones had remained in the intestines for a year and a half, and only after that period had given rise to the preceding symptoms. It is a fact that gall-stones, during a protracted stay in the intestines, become phosphatized and adopt the characteristics of true enteroliths. It is also a fact that gall-stones may more or less completely close the intestine and thus produce attacks of severe intestinal colics, especially if they lodge in large numbers in the narrow portion of the ileum, just above the ileocecal valve. Gabbi attributes the hemorrhagic quality of the exudate to previous malarial attacks.



Enterolith, measuring 15.4 by 12 by 10 cm. and weighing 945 gm.

J. H. Miller[4] reports a case of obstruction of the bowels by enterolith, composed of a phosphatized gall-stone. Recovery in this case also occurred after passing the stone by the rectum. The specimen weighed 183 gr. and measured 1¼ inches in length and 1 inch in width.

The case of Wiltshire,[5] also caused by gall-stones, is interesting in that the accumulated mass caused displacement of the kidney, which was relieved by operation.

The ingestion of large quantities of fruit with indigestible skins and seeds may give rise to a form of enterolith, or "gastrolith," as C. H. Cargile[6] more properly calls it, for the mass accumulates and remains in the stomach. He reports two cases, in which what was practically a cast of the stomach was made by a mass of persimmon skins and seeds. He also refers to two other similar cases, showing that this condition may not be uncommon in the South.

There are also found in the intestines and sometimes in the stools small concretions whose central mass consists of undigested food residue or inspissated mucus, while the bulk of the material is composed of ammonium magnesium phosphate, or perhaps magnesium phosphate, but may include calcium phosphate or carbonate and occasionally calcium and magnesium soaps and albuminous matter.

E. Deetz[6] and C. H. Bedford[7] report cases of intestinal sand. A distinction is made between "true" and "false" intestinal sand. The latter owes its origin to undigested vegetable particles, occasionally coated with earthy salts. "True" intestinal sand is found chiefly in gouty patients and is composed mostly of lime salts. Bedford attributes this fact to the long-continued milk diet given in such cases.

The only true case of fecal enterolith that I can find in the literature since 1899 is that of Ferguson and Reuter,[8] and as the history resembles in certain respects that of my case, I shall give a brief resumé.

Ferguson and Reuter's Case.—Mrs. J., aged 30, multipara, housewife, was admitted to Dallas Hospital Jan. 3, 1903. Since 10 years of age she had suffered with severe paroxysmal colic. She remembers at that time a small lump the size of a marble on the right side. This has never disappeared, but has gradually increased in size. Twelve years ago, at the age of 18, she was operated on in a Tacoma Hospital for tumor, but this was not removed. She was later informed that the intestines were too much involved to permit such a procedure.

On admission she had colicky pains in right hypogastric and inguinal regions, obstinate constipation, headache, nausea and vomiting. The abdomen was rigid and greatly distended.

Jan. 16, 1903, after treatment by ice-bags, purging,[8] enema, etc., the abdominal distention was sufficiently relieved to disclose a hard mass the size of a pear, freely movable within the intestine. Owing to its extreme hardness, a foreign body was suspected and a tentative diagnosis of enterolith was made. This was proved correct at operation, when the mass was found lying in the lumen of the ileum, about 15 inches from the ileocecal valve. Above the mass the intestine was dilated to twice its normal caliber and below contracted to one-third its normal size. The mass lay in a symmetrical, fusiform dilatation of the intestine, in which it was quite freely movable, acting as a ball-valve.

The specimen weighed 3½ ounces and measured 2½ inches in width and 3½ inches in length. It was composed of vegetable matter and salts with what appeared to be a large hazelnut nucleus. Recovery was uneventful.

My case reported below presents several interesting features, that is, the size and character of the enterolith, the absence of intestinal obstruction at any time, the symptom-complex leading to a mistaken diagnosis, the age and mental condition of the patient and her subsequent history.

Author's Case.—D. K., Russian, aged 17, single, shirt-waist maker, was admitted to the service of Dr. Taylor at Fordham Hospital on July 12, 1912. Nothing could be learned of her family history. Her parents were of the very poor peasant class of Russia.

*Personal History.*—The patient recalled no diseases of childhood, but had always been anemic and weak, with poor appetite and constipated bowels. Menstruation began one year ago, her periods being irregular in duration and occurrence and accompanied by severe pain. Patient lives in a poor hygienic and moral environment. At the age of 10 she first noticed a swelling of the abdomen in the hypogastric region. This tumor has gradually increased in size, has caused no pain, but at intervals has been slightly tender. Up to four months ago she had suffered from severe constipation, but since that time she has had large and copious movements. Her menstruation ceased entirely four months ago. She has had no vaginal discharge or uterine pain; denies sexual intercourse. There

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[3] Gabbi, U.: Clin. med. ital., 1899, xxxviii, 536.
[4] Miller, J. H.: Med. Fortnightly, December, 1901.
[5] Wiltshire, James G.: Virginia Med. Semi-Month., June, 1902.
[6] Deetz, E.: Deutsch. Arch. f. klin. Med., 1901, lxx, 365.
[7] Bedford, C. H.: Brit. Med. Jour., Dec. 6, 1902, p. 1764.
[8] Ferguson and Reuter: Med. Sentinel, Portland, Ore., September, 1903, p. 499.

## *New and Nonofficial Remedies*

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on *investigation made by or under the direction of the Council*. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

**ANTIMENINGOCOCCUS SERUM.**—(See N. N. R., 1913, p. 215.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

*Slee's Antimeningitis Serum.*—Marketed in vials containing 20 Cc.

**ANTISTREPTOCOCCUS SERUM.**—(See N. N. R., 1913, p. 216.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

*Slee's Antistreptococcic Serum.*—Marketed in vials containing 10 and 20 Cc.

## *Therapeutics*

### MORE IMPORTED (CANNED) MEDICATION

The prescriptions herein noted are criticized because they are considered by our medical journals of sufficient importance to be quoted[1] from French journals. Let us hope that such quotations will soon cease. The following combination is recommended to be given in "gouty migraine":

"R

| | | | |
|---|---|---|---|
| Extracti colchici cormi | | | |
| Quininae sulphatis | āā | gr. xlv | (3 grammes) |
| Pulveris digitalis | | gr. xxiii | (1.5 grammes) |

M. Fiant pilulae No. xxx.
Sig.: *One pill every evening.*"

Whether or not digitalis is advisable in gouty conditions is entirely dependent on the condition of the heart, and its use should not be advised without distinct statement of the conditions in which it is indicated, as many times digitalis is absolutely contra-indicated in gout.

The advisability of increasing the circulation in the brain by the use of quinin in gout might be seriously questioned. If the patient was plethoric, or had high blood-pressure or headache, quinin would seem inadvisable. Of course, it should be noted that the actual dosage here given is small, that is, 0.1 gm. (1½ grains) of quinin once a day, and it might not in this amount, cause any cerebral disturbance.

The value of 0.1 gm. (1½ grains) of the extract of colchicum root once a day is mythical; in fact, it is doubtful whether or not colchicum has any real value in chronic gouty conditions. In acute gouty conditions it seems to be of little value unless it produces free movements of the bowels. When colchicum is not prescribed in sufficient amount to cause free movements of the bowels, it is often combined with salicylic acid in some form, and it is the salicylic acid that is of benefit, although such benefit is often attributed to the colchicum.

Another prescription recommended "for the relief of acute attacks of gout" is the following:

"R

| | | |
|---|---|---|
| Quininae sulphatis | gr. xlv | (3 grammes) |
| Fluidextracti *aconiti* | ♏ xx | (1.3 grammes) |
| Extracti colchici *cormi* | gr. viiss | (0.5 gramme) |
| Extracti belladonnae foliorum | gr. iii | (0.2 gramme) |

M. Fiant pilulae No. xx.
Sig.: From one to four pills a day."

If aconite is to be of any value in a condition of acute gout, the preparation which is used must be an active one, and its administration must be *pushed until its* physiologic action is evident. To obtain the safe activity from aconite in such conditions as are present in acute gout it should be given in solution, and uncombined with other drugs, so *that its use may be stopped as soon as there is evidence of its full physiologic action.*

If one thinks that colchicum is of value in acute gout, its administration also must be pushed, and certainly one pill a day (although a latitude of from one to four pills a day is allowed) would be useless.

If quinin is of value in gout, let it be given alone, that its value may be demonstrated. Theoretically, a patient suffering from acute gout, if given quinin in doses of any amount, would have unpleasant cerebral disturbances added to his discomfort. There is no apparent physiologic or rational excuse for giving quinin to combat acute gout.

Of course, *it is immediately conceded that belladonna*, alone or in combination with aconite, would cause an abatement of peripheral pain; such *treatment* is not new. The only novelty is in the combination offered, and, since simplicity of medication is a desideratum and therefore each drug prescribed *should have positive* value, the quotation of so doubtful a mixture cannot be excused.

Again, from *France* come prescriptions for chorea. The writer quoted makes some good suggestions in regard to the general treatment of such patients, both in mild and in severe cases of chorea. He advises, "in mild cases," the following prescription:

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| | | | |
|---|---|---|---|
| Antipyrinae | | ʒ iiss | (10 grammes) |
| Tincturae belladonnae *foliorum* | | ♏ xl | (2.25 grammes) |
| Syrupii aurantii florum | | ℥ ii | (60 grammes) |
| Aquae destillatae | q. s. ad | ℥ v | (150 grammes) |

Misce."

Why is it necessary to tell an American physician that antipyrin can be dissolved *in syrup* of orange flowers and distilled water? Instruction *to this effect* may be given to second-year medical students; it is not necessary to copy such suggestions from France. The nonsense of prescribing distilled water should be emphasized, as investigations have *many times* shown that the distilled water of the drug shops contains more bacteria than ordinary water. If antipyrin is good treatment in chorea (and it may often be of value) let it be so stated, and the proper dose suggested.

The susceptibility of some persons, *even* children, to poisoning from belladonna should forbid its use in any such mixture as the preceding. Two very active drugs should rarely be combined in a mixture, as it may be wise to increase the dosage of one drug and to diminish that of the other. Belladonna could be ordered separately in the amount deemed advisable.

The writer quoted goes on to state that if the antipyrin does *not* prove successful in chorea, hydrated chloral in full doses should be given, and the following prescription is quoted:

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[1] Prescriptions quoted appeared in New York Med. Jour., Oct. 11, 1913; Oct. 25, 1913.

"℞

| | | | |
|---|---|---|---|
| Chlorali hydrati | | ʒ ss-i | (2-4 grammes) |
| Potassii bromidi | | ʒ ¼-ss | (1-2 grammes) |
| Codeinae sulphatis | | gr. ⅔ | ( 0.04 gramme) |
| Syrupi | | ʒ v | ( 20 grammes) |
| Aquae destillatae | q. s. ad | ℥ iiiss | (110 grammes) |

M. Sig.: To be taken within twenty-four hours in tablespoonful doses."

To give hydrated chloral in severe cases of chorea is not new, neither is its combination with potassium bromid. To be compelled to give codein to a violent choreic patient is not a novelty. It is bad treatment to combine these three active drugs in one prescription. It certainly is not necessary to tell American physicians that these very strong depressomotors and narcotics may be given, if need be, to choreic children. Such "canned medication" as this is beneath the dignity of our best medical journals. The statement could be made that in severe chorea the physician may resort to chloral, bromids or codein, and the reader's intelligence would not be insulted.

Another instance of imported medication may be given. A physician of note (else he would not be quoted), while discussing the subject of "cardiac disturbances in chronic dyspepsia," advises in the treatment of palpitation, intermittencies, tachycardia, bradycardia, pseudo-anginal attacks, etc., besides a proper arrangement of the diet, the following prescription for constipation:

"℞

| | | | |
|---|---|---|---|
| Fluidextracti frangulae | | | |
| Fluidextracti rhamni purshianae, āā | ʒ vii | (25 grammes) |
| Glycerini | ʒ x | (40 grammes) |

Misce."

The criticism of this is simply that any physician knows enough to give a laxative without being furnished with a special prescription copied from Europe. Also, some pleasant-tasting, active preparation of cascara is just as good as this combination, or better. The action of frangula is similar to that of rhubarb, but is much harsher. The advised dose of the fluidextract of frangula is not far from 22 minims, while the Pharmacopeia gives 15 minims as the dose. The same dose of the fluidextract of cascara is prescribed; and both are to be administered in glycerin, which, unless well diluted, may produce nausea. The advice is given that a teaspoonful of this mixture be taken "in a little water" at bedtime. This prescription is unnecessarily disagreeable, and might easily act to the patient's disadvantage.

The next suggestion is that "a cool, moist compress, covered with some impervious material may be left on the epigastric and precordial regions over night." The particular one of the preceding cardiac disturbances for the relief of which this application should be made is not specified. Clinically, most patients with tachycardia or pseudo-anginal attacks will not allow any such application over the heart.

One pill made by the following formula is recommended to be taken at night:

"℞

| | | |
|---|---|---|
| Extracti hyoscyami | | |
| Fluidextracti valerianae | | |
| Zinci oxidi | āā gr. 4/5 | (0.05 gramme) |

Fiat pilula No. i."

The extract of hyoscyamus furnishes an atropin treatment. As the particular cardiac disturbance under treatment is not stated, one must object to the use of any form of atropin in palpitation or tachycardia, as in some persons atropin will cause an increased heart activity. The value of valerian is mythical, as has been repeatedly stated in these columns. In fact, it is doubtful if valerian has any activity whatever, except as a carminative. Zinc oxid should not be used internally.

The quotation states in addition that when cardiac discomfort occurs, an ointment, recommended by another noted European clinician, should be lightly rubbed over the precordium. The variety of cardiac discomfort is again not stated. Perhaps such specification is superfluous. The prescription follows:

"℞

| | | |
|---|---|---|
| Veratrinae | gr. iiss | ( 0.15 gramme) |
| Extracti opii | gr. xii | ( 0.75 gramme) |
| Olei terebinthinae rectificati | ʒ ss | ( 2 grammes) |
| Olei menthae piperitae | gtt. xii | |
| Adipis lanae hydrosi | ℥ i | (30 grammes) |

Misce. Fiat unguentum."

It should be noted that veratrin ointments are dangerous; both to the one on whom they are used and to the one who applies them. The value of the extract of opium when so used is probably nil. The turpentine would irritate, the peppermint would irritate and the veratrin might irritate. The opium and the wool-fat should be sedative. It is a question whether this ointment "lightly rubbed" on would irritate or soothe. Such a prescription should not be ordered.

The further advice is given that the patient with this cardiac discomfort should take a tablespoonful of the following sedative preparation every hour until the attack ceases. Again it is not stated for what kind of an attack the mixture is prescribed.

"℞

| | | | |
|---|---|---|---|
| Potassium bromide | | | |
| Cherry-laurel water | of each | ʒ iss | ( 6 grammes) |
| Syrup of ether | | ℥ i | ( 30 grammes) |
| Valerian distillate | | ℥ iiiss | (110 grammes) |

Mix and make into a solution."

This prescription from the standpoint of American medication, the preparations presumably being founded on the United States Pharmacopeia and National Formulary, is the limit of imported canned advice. An explanatory paragraph does state that the "syrup of ether contains 2 per cent. of ether and 5 per cent. of alcohol." The "valerian distillate is made by macerating one part of valerian with eight parts of water for twelve hours, distilling, evaporating to four parts, and filtering." Of course, it stands to reason that either the patient's first attacks of heart disturbance would be relieved or the patient would be dead before such a preparation could be made. But what valerianic nonsense! And just think of the odor of that drug shop during the preparation of this valerian distillate!

The syrup of ether is perhaps stimulant; it certainly is not sedative; and again we have this everlasting dash of cherry-laurel water. Will Europe ever cease worshiping at this shrine?

Last of all comes good old potassium bromid, which any physician on this side of the water would use, if he thought the indications called for it, without this elaborate quotation. The dose of the bromid offered is about 10 grains, and is administered every half hour until the attack ceases. Bromids are slow-acting drugs, and while the initial dose is small, if the heart did not soon right itself, a large amount of bromid would soon be circulating in the patient. It is better, when bromids are indicated in cardiac disturbances, to give a dose considered sufficient, and then to wait a number of hours before further administration, until the drug has had time to act.

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SATURDAY, DECEMBER 20, 1913

## THE RESISTANCE OF VARIOUS NERVE-CELLS TO ANEMIA

The nervous system of higher animals is exceedingly sensitive to anemia or other physiologic conditions which involve a local lack of oxygen. Muscle tissue which has been supplied inadequately with this essential element or perhaps completely deprived of it for not inconsiderable periods of time may still show a satisfactory recovery of contractile power when the circulation is suitably restored and the resuscitating oxygen reaches the asphyxiated tissue-cells, but this is not the case with the nervous tissues. The nerve-cells of different classes and positions show differences in sensitiveness to anemia. Those of the cerebrum and cerebellum are unquestionably most readily damaged by oxygen starvation. There is evidence to show, for example, that eight minutes of complete anemia may permanently eliminate the function of some of the cells of the cortical areas. If the blood-supply there is wanting for more than twenty minutes it is rarely possible to discover restoration when the circulation is reestablished. In descending to the lower levels of the cerebrospinal nervous system the resistance to the detrimental effects of anemia or the immunity from permanent damage by lack of oxygen increases appreciably. In sequence the cells of the spinal bulb, the spinal cord and the spinal ganglia, respectively, appear to withstand anemia for longer and longer periods, so that a cessation of the circulation for eight or ten minutes may be of minor significance and permit of prompt complete recovery when the blood-supply is restored. Anemia of the spinal cord for an hour, however, is reported to be sufficient to cause necrosis of all the nervous elements.

A growing appreciation of the foregoing facts helps to explain the unfortunate outcome of conditions, as for example those following the oxygen starvation induced by carbon monoxid or coal-gas poisoning, in which there is acute oxygen want. Certain resulting permanent paraplegias are included in this group. The permanent disastrous results of oxygen want in the nervous retina induced by obstruction of the retinal vessels belong in the same category. Whether there are other neurons in the body which have a greater hardiness than those of the cerebrospinal axis, as just cited, has not hitherto been determined, though there have been intimations that some of the outlying cells, such as those of the sympathetic ganglia, are more stable in the absence of their blood-supply.

The persistence with which portions of the small intestine will exhibit rhythmic contractility long after their removal from the body, if they are treated with an oxygenated restorative like warmed Ringer's solution, suggests that their nervous supply, or more specifically the cells of the myenteric plexus, are exceptionally resistant to anemia. The basis for this assumption of survival of the nervous elements is the generally accepted evidence that rhythmic contractions of the alimentary canal do not occur if the plexus is wanting.[1] Quite apart from the purely theoretical aspect of the question, the determination of the degree of resistance of the intrinsic neurons of the alimentary tract to anemia and their limits of endurance are of interest in connection with the possibility of continued functioning after the interference with the circulation in surgical states such as hernia and intussusception.

An experimental inquiry conducted in the Harvard laboratory of W. B. Cannon, to whom we are already indebted for some of our fundamental knowledge of the alimentary tract, has furnished the basis for an intelligent appreciation of the points at issue in relation to the intestine.[2] According to these findings, if the vessels supplying parts of the alimentary canal are ligated, the tissues become edematous and purple, but may not be completely anemic. After this condition has persisted for six or seven hours such regions may recover normal activities, and, on being examined histologically, show nerve-cells with normal appearance. If complete anemia is produced by suitable compression, the condition may last as long as three hours and normal motility may still be restored. A persistence of compression anemia for three and one-half hours or longer, however, almost invariably results in loss of function and disappearance of nerve-cells in the compressed parts.

Cannon and Burket point out that the continued existence of the cells of the myenteric plexus after three hours of complete anemia — two hours longer than the cells of the sympathetic ganglia — reveals them as the most hardy nerve-cells thus far found in the body. Incidentally, it is worthy of emphasis that the concomitance of persistence or loss of function with persistence or destruction of nerve-cells lends new support to the contention that the spontaneous contractions of the alimentary canal are of nervous origin.

## THE WASHINGTON ANTIVIVISECTION CONGRESS

The third Antivivisection and Animal Protection Congress has been in session in Washington during the past week. As the name indicates, the congress has represented two interests. So far as it was an animal protection congress, all could heartily support it, even the "vivisectors" themselves, for no men have done more to protect animals from pain and disease than they. But so far as it was an antivivisection congress it was hostile to the very means which have proved most potent for alleviating the suffering of man and the lower animals as well. Under these circumstances it is impossible to judge the value of the lists of bishops, generals, senators, clergymen, governors, members of Congress and other public men widely advertised as vice-presidents of the congress, because it is impossible to know on which aspect of this two-faced organization they were looking when they permitted the use of their names.

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[1] Magnus, R.: Arch. f. d. ges. Physiol., 1904, cii, 362.

[2] Cannon, W. B., and Burket, I. B.: The Endurance of Anemia by Nerve-Cells in the Myenteric Plexus, Am. Jour. Physiol., 1913, xxxii, 247.

Most prominent among the foreign members was the founder of these congresses, the widely heralded Miss Lind-af-Hageby, whose false statements a decade ago cost Coleridge $25,000 in his suit with Bayliss, and whose attempt this year to refute the charges that she was "a deliberate and systematic liar, and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood," resulted in a prompt verdict against her. Her present contention is that more is to be expected for human life and welfare from hygiene and sanitation than from drugs and surgery. That practically all the modern practice of hygiene and sanitation is firmly based on the results and methods of "vivisection" is a fact which she seems to have overlooked.

The Rockefeller Institute, which in the short period of its existence has given the medical profession an effective means of combating cerebrospinal meningitis, a new method for the diagnosis of syphilis and devices for artificial respiration in anesthesia and shock, not to mention other important discoveries, was the chief target for vilification. It was designated by various speakers as a "chamber of horrors," as a "working model of hell," and as the crown of a "toppling mass" of wealth, "tainted by lying, stealing, arson and murder."

The most sensational claim made at the meeting was that not uncommonly physicians inoculate unsuspecting persons, often children and other dependents, with the germs of disease, solely for experimental purposes. This statement has been published with big head-lines in newspapers in all parts of the country. The evidence for it consisted in citing once more instances which have repeatedly appeared in antivivisection literature, and have repeatedly been shown to be false or without professional support. The "poisoning" of insane patients with thyroid extract was again mentioned, although the crafty deception in this charge has been made clear at least twice in the past twelve years.[1] The spraying of the nose and throat of patients with "poisons of diphtheria, small-pox, scarlet fever or consumption" was again instanced, although it has been disclosed that the person who confessed to having done this had also confessed that he had no standing in the medical profession, and, indeed, was quite in agreement with many antivivisectionists in disbelieving that bacteria cause disease.[2] The use of luetin was again described[3] as the "inoculation of the germs of a vile incurable disease," although it has been carefully shown that luetin was first proved wholly innocuous by injections into animals and into the discoverer himself, as well as into other physicians who volunteered for the test, and not until then was used for diagnostic purposes.

The public should definitely understand that the medical profession wholly repudiates and regards with abhorrence the employment of any procedure whatever which is in any way likely to injure rather than to benefit a patient who has entrusted himself, or who has been entrusted, to a physician's care. Such action would be absolutely at variance with the prime object of medical service—the welfare and the restoration of the sick.

Fortunately, the lay press is beginning to understand the unreliability of antivivisectionist assertions. Various papers have commented on the "virulence and nonsensical folly" of the misstatements and misrepresentations of antivivisectionists, have recognized them "as peculiarly impervious to the facts," have asserted that they "wilfully hide the serious purpose underneath the experiments on animals," or have flatly declared that they are "promulgating the most outrageous falsehoods about men whose lives are devoted as unselfishly and as efficiently to the service of humanity as any that could be mentioned." Even one of the speakers at the congress was moved to urge his hearers to "stick to the facts" and to "cease making wild statements which they could not prove." Let us hope that some day they may do so.

## IN WHAT FORM ARE PROTEIN DIGESTION PRODUCTS ABSORBED?

The idea that the products of the digestion of protein are regenerated into blood proteins as they pass through the alimentary wall in the course of their absorption has so long dominated the teaching of physiologists that it has not been easy to become adjusted to an entirely new doctrine in respect to the fate of these foodstuffs. The stubborn facts against which all attempts at theorizing have sooner or later stumbled are that ingested proteins disappear from the lumen of the digestive tract somehow in the course of alimentation; their nitrogenous end-product, urea, appears in a few hours in the urine; and what happens to bridge the gap between the beginning and end of this important chapter in physiology has almost completely eluded discovery, and therefore given room for a play of speculation.

It was as easy as it was inconclusive to assume that a portion of the food proteins or their derivatives may be built up in the cells lining the alimentary canal to form blood proteins, so that this organ would have to be regarded as an *important blood-forming organ.* The other extreme of hypothesis found its expression in the view that probably a major *portion of the protein does not reach the tissues at all* as a nitrogenous compound, but undergoes deamination in the intestinal wall, the nitrogen being rapidly carried by the portal circulation to the liver and converted into urea, and *thereupon* excreted by the kidneys, while the non-nitrogenous moiety is carried to the tissues, to which it serves as an important and ready source of energy. If we seek for the underlying reason why recourse was had to either of the preceding assumptions (for which it must in fairness be admitted that there was something more than speculative justification), it doubtless rests in the fact that no convincing evidence of the presence of nitrogenous digestion fragments in the blood after a protein meal was forthcoming. Every now and then some one announced the discovery of them, only to have its reality denied in a succeeding publication. So competent a chemical investigator as Abderhalden has in the past been unable to admit that nitrogenous protein digestion derivatives are present in the blood in amounts indicative of any routine physiologic function.

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[1] Cannon, Walter B.: Characteristics of Antivivisection Literature, Critic and Guide, February, 1911; Defense of Research Pamphlet XIX, p. 10.

[2] Life, May 26, 1910.

[3] Jour. Zoöphily, 1913, xxii, 4.

The aspect of the subject has become changed, however, by the advent of new and more delicate methods of blood analysis. To some of these reference has been made here in the past.[1] The earlier work of Delaunay[2] was followed by the noteworthy experiments of Folin and Denis[3] and of Van Slyke and Meyer,[4] all indicative of an indisputable absorption of *amino-acids* as such *from the alimentary tract.* This evidence that the protein products truly reach the blood-stream as amino-acids and are presumably carried to the tissues where they may be reintegrated into the proteins characteristic of each tissue or finally disintegrated with resultant production of the end-product urea has again been strongly fortified by new contributions from London's laboratory in St. Petersburg.[5] These show that only a few minutes after the introduction of an amino-acid like alanin into the intestine an increased content of aminonitrogen is detectable in the blood of the jugular vein, that is, the general circulation. Furthermore, during the digestive cycle in animals the proportion of aminonitrogen increases not only in the portal blood, but also in the peripheral circulation — less, as a rule, in the latter than in the former. Such evidence must be taken as an unmistakable indication of the current drift. The amino-acids are absorbed as such; and so they play their rôle in the nutritive processes. It has at length become necessary to readjust our theories to the facts of experiment and observation.

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[1] Can Proteins Be Absorbed without Preliminary Digestion? editorial, The Journal A. M. A., March 9, 1912, p. 702; A New Theory of Protein Metabolism, Sept. 14, 1912, p. 880; More Facts Regarding Protein Metabolism, Oct. 26, 1912, p. 1548.

[2] Delaunay, H.: *Contributions à l'étude du rôle des acides aminés dans l'organisme animal,* Arch. d. mal. de l'appareil digestif, 1911, v, 218.

[3] Folin, O., and Denis, W.: Protein Metabolism from the Standpoint of Blood and Tissue Analysis, Jour. Biol. Chem., 1912, xi, 87 and subsequent papers.

[4] Van Slyke, D. D., and Meyer, G. M.: The Amino-Acid Nitrogen of the Blood, Jour. Biol. Chem., 1912, xii, 399.

[5] London, E. S., *and others:* Weitere Untersuchungen über die Verdauung und Resorption unter normalen und pathologischen Verhältnissen. Ztschr. f. physiol. Chem., 1913, lxxxvii, 313.

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## OCCURRENCE OF TUBERCLE BACILLI IN THE CIRCULATING BLOOD

A great deal of work has been done during recent years on the question of the occurrence of tubercle bacilli in the blood of tuberculous patients. Two methods have been used, namely, the direct examination of the blood in stained preparations and the inoculation of guinea-pigs with blood. The results obtained by different investigators are in each case widely divergent, some having high percentages of positive results, others almost or wholly negative results. Some even report finding bacilli in the blood of healthy persons, who at least were not suffering from any active tuberculosis. In certain series of observations in which both methods were used, the microscopic examination of the blood gave from 60 to 100 per cent. of positive results, while the inoculation of guinea-pigs gave only an occasional positive result, and yet the latter method is recognized as by far the more sensitive and reliable of the two.

There are also, of course, observations in which closely concordant results were obtained, as for instance, those recently reported by Klopstock and Seligmann.[1] These investigators injected guinea-pigs with the sediment of from 5 to 15 c.c. of blood from forty-nine patients with pulmonary tuberculosis in various stages, but in no case did any inoculation tuberculosis develop. In no case in this series did the examination of blood preparations reveal bacilli that could be accepted as unquestionable tubercle bacilli. Before the sediment was injected it was treated with antiformin and then washed.

How is this divergence of results to be explained? As regards the results of microscopic examination alleged as positive, we know that, in some cases at least, saprophytic acid-proof bacilli present in the water or solutions used have been mistaken for tubercle bacilli. It is possible that precipitates and other artefacts have been so mistaken also. Now with respect to the animal inoculations it should be noted that the amount of blood used, the number of animals inoculated and the kind of cases of tuberculosis from which the blood was obtained have not been the same, so that the results really are not comparable. It is also evident that grave errors have been made by some workers in not exercising adequate care in the study and interpretation of the alleged tuberculous lesions in the guinea-pigs. In other words, results reported as positive do not stand the tests when judged according to the criteria applied to inoculation-tuberculosis. At all events, the results so far recorded of observations on the occurrence of tubercle bacilli in the circulation in tuberculosis are so contradictory and in many cases so manifestly unreliable that no definite conclusions are permissible. The work has not given us any methods of value in diagnosis, nor has it given us any new views as to the genesis of tuberculosis.

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[1] Klopstock and Seligmann: Ztschr. f. Hyg. u. Infectionskr., 1913, lxxvi, 77.

### THE PRESERVATION OF MILK BY DRYING

In the attempt to furnish milk to the consumer in a form free from the objections which hygienic considerations are yearly interposing in greater degree, one of the chief stumbling-blocks lies in the necessity of keeping the nutrient fluid fresh between the times of milking and of its delivery to the home. The problem of the modes of preservation, involving the questions of the application of heat to the raw product, the use of chemical preservatives, or the subjection to low temperature, has given rise to some acrimonious debate and has been the occasion for not a little legislation attempting to regulate the practices concerned. All of the schemes proposed or in use owe any alleged efficiency to such potency as they may exhibit in the direction of inhibiting or destroying the growth of micro-organisms. All of the proposed modes of preserving milk in transit have serious limitations in respect either to effectiveness or to expediency and cost. In view of this it seems strange that greater effort has not been devoted to perfecting some more suitable plan, in particular the obviously promising scheme of desiccating milk.

The concentration of milk by evaporation in the air was attempted more than a century ago. The first really practical method was devised by Mr. Gail Borden of White Plains, N. Y. Acting on a suggestion made by Horsford, he successfully evaporated milk at a low temperature under reduced pressure, and in 1856 obtained a patent for his process of preparing "condensed" milk, as it was subsequently termed. The lack of legal restrictions soon permitted the use of nutritively inferior grades of milk in the production of condensed milk, so that for many years poor qualities prepared from skimmed milk were freely sold to the ignorant customer. From the point of view of the danger of milk as a source of infection, it is doubtless true that there are advantages in condensed milk which are not always inherent in the fresh product. Delépine is said to have proved conclusively that tubercle bacilli, added purposely to milk before concentration, are invariably killed in the process of evaporation.[1] Condensed milk, however, is by no means always germ-free, and living organisms have been found in considerable number in commercial samples, although the species which were isolated were not pathogenic.[1]

The chief objection which has been raised to the widespread use of the more easily conserved condensed milk in place of the readily deteriorating fresh milk has been derived from the field of infant-feeding. Whether or not it be fundamentally justified, there is nevertheless a strong belief prevalent, based on apparently substantial grounds, that children fed on condensed milk are less resistant to the encroachments of disease than those brought up on fresh milk. Furthermore, condensed milk will deteriorate like fresh milk if it is diluted and then exposed to the chance of bacterial contamination.

Since the early years of the present century attempts have been made to carry the desiccation of milk still further than is done in the case of the thick, viscous condensed milk which already is concentrated enough to be a poor culture-medium for micro-organisms. The presence of fat has interposed the greatest difficulty to the complete drying of milk. Three successful processes for the manufacture of dried milk are in actual use.[2] All of them are protected by general and subsidiary patents which make it difficult as yet to assign a universally recognized name to the procedures. In the Ekenberg process the milk is sprayed under constant pressure on the inner surface of a rotating steam-heated cylinder. The milk is thus dried in partial vacuum, at a comparatively low temperature. A more frequently employed process, common in the production of cheaper grades in the United States, sprays the previously concentrated milk on the exterior highly polished surfaces of revolving steel drums. Here it is almost instantaneously dried at a temperature of 230 F. and then scraped off by sharp knife-blades. In the Bénevot-de-Neveu process an entirely different product results. The milk is first concentrated in a vacuum and then sprayed under great pressure into a large drying-chamber where the cloud of finely divided particles is surrounded by a current of hot air and thereby instantly dried. The result is a powder in which many of the physical and chemical properties of the original milk are retained.

The chief objection to most of the material prepared in this way lies in the less agreeable flavor of the dried product. There is every reason to believe that this can be improved with increased attention to the technic, especially the temperatures applied in the different stages and the containers employed. Desiccated milks have already begun to receive attention in the clinic of infant-feeding.[3] This is the severest test to which it can be put. Economy, cleanliness, convenience and hygienic considerations all suggest that high grades of dried milk are entitled to careful investigation for the possibilities which they present. A study of the markets shows that they have already made an inroad into the culinary departments of many institutions and homes.

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[1] Coutts, F. S. H.: Report to the Local Government Board on an Inquiry as to Condensed Milks, London, 1911, N. S., No. 56.

[2] A description is given by Pritchard, E.: The Milk Problem—Condensation and Preservation, Bedrock, 1913, ii, 244.

[3] Porcher, C.: Le lait desséché, Paris.

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**Psychiatry.**—Psychiatry not only enters into intimate contact with all the fundamental sciences of medicine and biology in general, but also touches on the social and moral sciences. On all it imposes problems, from all it requests data.—Lugaro, Modern Problems in Psychiatry.

# *Current Comment*

## ANOTHER "CANCER CURE"

A few days ago some of the Denver newspapers contained full-page advertisements of a "cure for cancer." The public was told: "The International Skin and Cancer Institute of Denver claims to have the *only* reliable treatment for cancer in existence. It claims that the remedy it possesses is the *only cure* in the world." The exploiter of this, the latest of cruel frauds, is one John D. Alkire, who, so far as we can learn, has neither medical nor pharmaceutical knowledge. What the "cure" is supposed to be, we do not know; neither, for that matter, is it necessary to know. Certain it is that the thing is a fraud — a cruel fraud, a damnable fraud. It is no excuse to say that Alkire is honestly convinced that the stuff he is selling is a cure for cancer. His conviction merely makes him that much more dangerous and gives him greater potentialities for harm. From its method of exploitation it is impossible to absolve Alkire from the suspicion, at least, that he is not acting in good faith. He claims to have lost both his father and his mother from cancer. If, therefore, he was absolutely convinced that he had the only cure known for this fearful scourge, it is hardly conceivable that he would monopolize the secret of it for the dollars to be made in exploiting it. Alkire and those associated with him will doubtless make money. Those afflicted with cancer, and those who believe themselves to be afflicted with cancer, will flock to Denver for the cure. Of those who rely on Alkire, the actual victims of the disease will, of course, die, but there will be the usual proportion of recoveries from non-malignant sores that will be heralded as "cures." This is the history of every fraudulent "cancer cure." Among the first beneficiaries of Alkire's inhuman business are those Denver newspapers that sold their pages to give publicity to this lying message to the unfortunate sufferers from cancer. To the honor of Denver be it said, some of its newspapers refused to accept Alkire's advertisement.

[After the preceding was in type a proof was sent to a Denver correspondent. Apparently, it was shown to some one connected with the Alkire concern, for on December 15, The Journal received the following telegraphic day letter from Denver:

> "We have learned of your proposed article to be published under title of Current Comment "Another 'Cancer Cure'" in which you make an unwarranted attack upon John D. Alkire and the International Skin and Cancer Institute Company. We wish to advise you that we consider this communication libelous, damaging and wholly unwarranted and that we will attempt to hold you responsible in damages if the communication is published and circulated in that form.—John Horn Chiles, John A. Deweese, Attorneys for John D. Alkire and the International Skin and Cancer Institute Company."

The Journal is not given to publishing matter for the purpose of injuring any one. Neither is it in the habit of being intimidated by threats of lawsuits. The comment on Alkire's "cancer cure" was written for one purpose only: that of attempting to offset in some small degree the publicity that had been given, through a portion of the Denver daily papers, to as cruel and inhuman a fraud as we know of — an alleged cure for cancer — and to warn the public from placing any faith in it. This being the purpose, The Journal is not to be turned from its course by threats of reprisal.]

## NEWSPAPER COMMENT ON ANTIVIVISECTION

We comment elsewhere on the recent antivivisection congress in Washington. It has been interesting to notice the attitudes taken by the newspapers. In general, those commonly classed as "yellow" have sided with the antivivisectionists, although in a somewhat half-hearted way, at the same time giving prominence in glaring headlines to the false, and therefore sensational, statements of these misguided enthusiasts. On the other hand, the great mass of newspapers, in their news pages as well as editorially, have tried to represent the real facts. The editorial comments in some instances have been excellent and have shown appreciation of the true conditions. Typical of these is one in the Boston *Herald*, which, under the title "Those Who Will Not See," says: "At the International Antivivisection Congress now in session in Washington, time-honored falsehoods are being rehearsed. Antivivisectionists are peculiarly impervious to facts. Perennially, they assert that animal experimentation has never accomplished anything." It continues with a series of paragraphs setting forth the great benefits to humanity resulting from animal experimentation, which has reduced the mortality in diphtheria from over 50 per cent. to practically nothing; has found a certain preventive for lockjaw; has discovered the Pasteur treatment for hydrophobia, and is daily uncovering great truths which must eventually bring to light cures for cancer, infantile paralysis, tuberculosis and other scourges of mankind which have hitherto baffled the scientists. It then continues: "But all this mass of evidence rolls from the antivivisectionists like water off a duck's back. And when Miss Lind-af-Hageby, the most audible of the assembled humanitarians, suggests sarcastically that scientists should try the experiment on themselves, she overlooks, from the depth of her ignorance, the long roll of honor of men and women who deliberately and unflinchingly risked and gave their lives in the cause of science."

## A PAMPHLET ON QUACKERY

The campaign of the Chicago *Tribune* against quacks operating in and from Chicago, has been referred to at various times in these pages. The *Tribune's* articles have had a far-reaching effect. The interest of public and press alike has been awakened. But quackery is about the same wherever we find it, from New York to San Francisco, from Portland to New Orleans. The facts brought out by the *Tribune*, therefore, are just as pertinent to the public generally as they are to the citizens of Chicago—and they will be as much to the point five years from now as they are to-day. Newspaper campaigns must, in the nature of the case, be more or less evanescent. The memory of the public is notoriously short. For this reason The Journal obtained permission to reprint the *Tribune's* articles in pamphlet form and thus put the material in a comparatively permanent form. The result is a booklet of 142 pages.[1] It should be in the hands of every physician to show those of his patients who are likely to fall into the hands of medical charlatans. Written as it is, by newspaper men, and containing as it does, the actual, first-hand experiences of the *Tribune's* investigators, it tells a story that is at once interesting and enlightening. The *Tribune* has turned on the light; we hope that the noisome pictures disclosed thereby may be given the widest possible publicity.

## *Medical News*

### ALABAMA

**Personal.**—Dr. Alf F. E. Thomas, Birmingham, was painfully injured in a collision between motor cars December 6.

**New Society Formed.**—The Alabama Society of Moral and Sanitary Prophylaxis was organized at Birmingham December 29. George H. Denny of the University of Alabama was elected president; Dr. George Petrie, Auburn, a vice-president, and Dr. William W. Dinsmore, Montgomery, secretary.

**Health Campaigning.**—Dr. William H. Sanders, Mobile, state health officer, and Dr. Philip B. Moss, Montgomery, director of the State Pasteur Institution, inaugurated a health campaign in Henry County the second week in December and in the succeeding week conducted a similar campaign in Houston County.

**New Staff Appointed.**—At a meeting of the board of directors of the Elizabeth Duncan Memorial Hospital, Bessemer, the following staff was appointed: Dr. Thomas F. Robinson, chief of staff; Dr. Samuel E. Grout, consulting surgeon; Dr. William Waldrop, oculist, and emergency staff, Drs. R. W. Waldrop, Carl A. Harris, Thomas C. Donald, James C. Berry and Edward P. Lacey.

**New Officers.**—Blount County Medical Society: president, Dr. Wilson T. Cantrell, Blount Springs; secretary-treasurer, Dr. Jesse T. Hancock, Oneonta.——Morgan County Medical Society at New Decatur, December 6: president, Dr. Arthur M. White, Hartselle.——Chilton County Medical Society at Mountain Creek: president, Dr. Julius P. Hayes; secretary-treasurer, Dr. Thomas J. Marcus, both of Clanton.——Dallas County Medical Association at Selma, December 3: president, Dr. Thomas G. Howard; secretary, Dr. Clarence C. Elebash, both of Selma.——Hale County Medical Society at Greensboro: president, Dr. Jacob Huggins, Newbern; secretary-treasurer, Dr. Charles A. Poellnitz, Greensboro.——St. Clair County Medical Society at Odenville, December 3: president, Dr. James W. Wood, Springville; secretary-treasurer, Dr. J. R. Chandler, Odenville.——Etowah County Medical Society at Gadsden, December 3: president, Dr. James H. Wood, Attalla.——Calhoun County Medical Society at Anniston, December 2: president, Dr. James C. Moore, Anniston; secretary, Dr. Jackson W. Landham, both of Anniston.——Madison County Medical Society at Huntsville, December 1: president, Dr. Charles E. Blanton, New Market; secretary-treasurer, Dr. Edgar Rand, Huntsville.——Jefferson County Medical Association at Birmingham, December 1: president, Dr. James M. Mason; secretary-treasurer, Dr. Harry P. Shugerman, both of Birmingham.——Lee County Medical Society at Opelika; president, Dr. Abijah B. Bennett; secretary-treasurer, Dr. O. Velpeau Langley, both of Opelika.——Montgomery County Medical Society at Montgomery: president, Dr. Fred W. Wilkerson; secretary, Dr. Paul S. Mertins, both of Montgomery.

### CALIFORNIA

**To Help Convalescents.**—The auxiliary to the University of Stanford Clinic, at a meeting recently held at Lane Hospital, San Francisco, effected a permanent organization to care for patients after their discharge from the hospital.

**New Officers.**—Yolo County Medical Society at Woodland, December 2: president, Dr. Claire Rason; secretary, Dr. Lula J. Beebe, both of Woodland.

**Psychopathic Ward Approved.**—The psychopathic ward of the Los Angeles County Hospital has been approved by the board of supervisors and formally accepted. Construction has begun on another wing of the Los Angeles County Hospital.

**Personal.**—Dr. Philip B. Fry, Benicia, has been appointed surgeon for the Southern Pacific system at Fort Costa.——Dr. Esther Rosencrantz has returned to San Francisco after several years of study abroad.——Dr. William F. Snow, Sacramento, secretary of the State Board of Health, has resigned on account, it is said, of differences with the State Board of Control.

### ILLINOIS

**Hospital Closed.**—The hospital at the Navy Training Station, Great Lakes, constructed by the government at great expense, is not to be reopened as it is considered an unnecessary expense to operate a large hospital when there are so few men stationed at the station.

**Personal.**—Dr. Frank Parsons Norbury, Springfield, and Dr. Albert H. Dollear, Hospital, have purchased Maplewood Sanatorium, Jacksonville, which was originally established by Dr. Norbury in 1901.——Dr. Lee O. Scott, Rockford, is reported to be seriously ill with typhoid fever in Canonsburg, Pa.——Drs. R. R. and H. F. McCarthy, assistant physicians at the Elgin State Hospital, have been transferred to the Dunning State Hospital.——Dr. Faith Spangler, assistant at the Dunning State Hospital, has been transferred to the Elgin State Hospital.

**New Officers.**—Adams County Medical Society at Quincy, December 8: president, Dr. Kirk S. Shawgo; secretary, Dr. Elizabeth B. Ball (reelected), both of Quincy.——Vermillion County Medical Society at Danville, December 8: president, Dr. Richard A. Cloyd, Catlin; secretary, Dr. E. Gordon C. Williams, Oakwood.——Madison County Medical Society at Alton, December 5: president, Dr. Edgar A. Cook, Upper Alton; secretary, Dr. Edward W. Fiegenbaum, Edwardsville.——Kewanee Physicians' Club, organized December 4: president, Dr. H. Nelson Heflin; secretary-treasurer, Dr. Francis O. Lowe.——North Central Illinois Medical Association at La Salle, December 9: president, Dr. George A. Dicus, Streator.

#### Chicago

**Medical Litterateur Dies.**—Carl H. von Klein, well known in Chicago as a collaborator of medical and collateral literature, as a translator and abstractor of medical articles, noted as an Egyptian scholar, whose work on the "Papyrus Ebers" was almost ready for issue, died in the Cook County Hospital, December 12, from diabetic gangrene, aged 71.

**Ball Addresses Medical History Society.**—The ninth meeting of the Society of Medical History of Chicago was held at the Hotel Sherman, December 11, when Dr. James Moores Ball, St. Louis, delivered an address entitled "Great Artists and Famous Anatomists," illustrated by lantern slides. Dr. William E. Quine, president of the society, was in the chair.

**Health Appropriation Cut.**—In the city budget for 1914 the commissioner of health asked for $1,160,278 for his department and the comptroller reduced this estimate by $220,497, leaving the recommended apportionment $2,870 less than last year. The health commissioner has made a vigorous protest, as he maintains that with this reduction the department will be dangerously crippled by lack of funds.

**Ball for Lying-In Hospital.**—The artists' fête to be given in the First Regiment Armory, January 9, is for the benefit of the new Chicago Lying-in Hospital, which is to be located on Fifty-First Street facing Washington Park. The building is to be six stories, fireproof, with six operating-rooms, five nurseries, two laboratories and four incubators. There will be beds for 105 mothers and their babies, and one-third of the hospital will be given up to free patients.

### INDIANA

**State Board Recommends Full-Time Service.**—In the annual report of the State Board of Health recommendations are made that health officers be paid sufficient salary so that they may give their entire time to the work of their offices and not be compelled to take private practice.

**Verdict of Not Guilty in the Knabe Case.**—William B. Craig, a veterinary surgeon of Indianapolis, charged with the murder of Dr. Helene Knabe, was tried at Shelbyville last week. After the prosecution rested, the judge instructed the jury to return a verdict of not guilty on account of insufficient evidence.

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[1] "Men's Specialists Frauds," price 10 cents, post-paid.

**Hospital Notes.**—The commissioners of Hamilton County have authorized a $30,000 bond issue for the erection of a hospital at Noblesville. It was decided to purchase a building erected several years ago for a hospital by Dr. Samuel Harrell. ——Property valued at $22,000 has been presented to the hospital association at Washington, Ind.

**Personal.**—Dr. Charles S. Little, Petersburg, is reported to be critically ill.——Dr. John A. Salb has been appointed assistant police surgeon of Indianapolis.——The office of Dr. David H. Harold of Indianapolis was damaged by fire to the extent of $3,000 December 3.——Dr. David N. Foutz, Royal Center, was operated on for cataract recently, and is reported to be doing well.

**New Officers.**—Elkhart County Medical Society: president, Dr. Elmer E. Ash, Goshen; secretary, Dr. James A. Work, Jr., Elkhart.——Henry County Medical Society at Newcastle, December 4: president, Dr. Herman W. McDonald, Newcastle; secretary-treasurer, Dr. Walter C. Van Nuys, Newcastle.——Sullivan County Medical Society at Farmersburg: president, Dr. Robert H. Van Cleave; secretary-treasurer, Dr. James B. Maple, Shelburn.——Wells County Medical Society at Bluffton, December 2: president, Dr. Louis Severin, Bluffton; secretary-treasurer, Dr. Samuel A. Schoemaker, Bluffton.

## IOWA

**Personal.**—Dr. Guilford H. Sumner, Des Moines, entertained the state executive council at luncheon December 9.——Dr. George Hofstetter, Clinton, who has been seriously ill, is reported to be convalescent.——Dr. Ira Zeno Plunkett, Lewis, is reported to be seriously ill with cirrhosis of the liver.

**New Officers.**—Medical Society of Burlington, December 10: president, Dr. Albert C. Moerke; secretary, Dr. Ernest A. Hunt.——Clinton County Medical Society at Clinton, December 7: president, Dr. Harry C. Moffett, Clinton; secretary-treasurer, Dr. George A. Smith, Clinton.——Webster County Medical Society, December 2: president, Dr. William W. Bowen; secretary-treasurer, Dr. George B. Palmer (reelected), both of Fort Dodge.——Iowa City Medical Society, December 4: president, Dr. Charles S. Chase; secretary, Dr. Zella White Steward.——Cass County Medical Society at Atlantic, December 4: president, Dr. Ulysses S. Mullins, Atlantic; secretary-treasurer, Dr. Millard F. Stults, Wiota.——Monona County Medical Society at Onawa, December 3: president, Dr. John A. Thomson, Onawa; secretary, Dr. Frederick S. Spearman, Whiting.

## KENTUCKY

**Dr. Cecil Dead.**—The death of Dr. John G. Cecil, one of the best-known physicians of Louisville, occurred on December 12. A notice will appear in the obituary column next week.

**Individual Campaign for Hospital.**—In a one-man campaign for two weeks carried on by Lucas Brodhead to raise an endowment of $10,000 for the Woodford Memorial Hospital, Mr. Brodhead secured $9,075.

**Personal.**—Dr. J. T. Dixon has been elected president of the Owensboro Anti-Tuberculosis Association.——Dr. Ap Morgan Vance, Louisville, who was recently operated on at St. Joseph's Infirmatory, is reported to be convalescent.

**County Health Officers Assemble.**—A meeting of the county health officers of the state was held in Louisville, December 8 to 11. Among the out-of-town speakers were Dr. J. N. Hurty, commissioner of health of Indiana; Asst.-Surg. James H. Oakley, U.S.P.H.S., and Dr. Cressy L. Wilbur, Washington, director of the Bureau of Vital Statistics.

**New Officers.**—Fayette County Medical Society at High Oak Sanatorium, December 9: president, Dr. Carl L. Wheeler; secretary-treasurer, Dr. Lee C. Redmon (reelected), both of Lexington.——Oldham County Medical Society at La Grange, December 4: president, Dr. John E. L. Harbold; secretary-treasurer, Dr. Edgar D. Burnett, Anchorage (reelected).——Union County Medical Association at Morganfield, December 3: president, Dr. Carl P. Cottingham, Uniontown; secretary, Dr. Samuel L. Henry, Morganfield.——Henderson County Medical Association at Henderson, December 1: president, Dr. William A. Poole; secretary-treasurer, Dr. B. J. Neary, both of Henderson.——Fayette County Tuberculosis Association at Lexington, November 26: president, Dr. Ernest B. Bradley; vice-presidents, Dr. Frank H. Clarke and Dr. Orrin L. Smith; secretary, Mrs. J. C. Rogers.

## MICHIGAN

**Sanatorium Opened.**—The Ingham County Sanatorium, Lansing, was formally opened, December 1.

**Personal.**—Dr. Robert L. French, Detroit, has succeeded Dr. Edmond Quandt as physician of Wayne County.——Dr. Sylvester C. J. Ostrom, Saginaw, who has been seriously ill, is reported to be improving.——Dr. Hugh Cary, Detroit, is said to be critically ill.

**Cannot Care for Leper.**—The secretary of the State Board of Health has informed the health officer of Benton Harbor that the state has no provision for the care of lepers and cannot therefore assume responsibility for Jacob Goldstein. There is no state institution to which Goldstein can be admitted.

**New Officers.**—Bay County Medical Society at Bay City, December 9: president, Dr. Colin A. Stewart; secretary-treasurer, Dr. George W. Trumble, both of Bay City.——Kalamazoo Academy of Medicine, thirteenth annual meeting, December 9: president, Dr. James E. Maxwell, Decatur; secretary, Dr. Clarke B. Fulkerson, Kalamazoo.——Jackson County Medical Society at Jackson, December 4: president, Dr. William A. Gibson; secretary, Dr. George A. Seybold, both of Jackson. ——Calhoun County Medical Association's twenty-eighth annual meeting at Battle Creek, December 2: president, Dr. Elmer L. Eggleston; secretary-treasurer, Dr. A. Floyd Kingsley, both of Battle Creek.——Ingham County Medical Society at Lansing, November 20: president, Dr. Samuel Osborn; secretary-treasurer, Dr. Frederick M. Huntley, both of Lansing.

## NEBRASKA

**State Morgue Established.**—A state morgue has been established by the State Anatomical Board at the State Medical College, Omaha. Arrangements have been made to preserve the bodies of persons who die unidentified, for sixty days, so that there may be no difficulty about finding or identifying the bodies.

**Physician Exonerated.**—In the suit of John F. Neely against Dr. Homer Davis, Genoa, the case was taken from the jury by the federal judge, who found the plaintiff had no case. The suit was for $7,500 damages, the plaintiff claiming that a deformity of the finger was due to improper treatment by the physician. The case was handled by the legal department of the State Medical Association.

**Laboratory Building Dedicated.**—The new laboratory building of the University of Nebraska School of Medicine, Omaha, the first of the series of buildings to be constructed, was formally dedicated October 16. Addresses were made by Dean Wilson O. Bridges, Hon. John M. Grossman, former Dean Henry B. Ward, Regent F. L. Haller and Dr. Howard A. Kelly, Baltimore.——The University of Nebraska has opened a free dispensary at 1716 Dodge Street, Omaha.

**Additions to Faculty.**—Additions to the faculty of the University of Nebraska recently announced are Dr. Leroy Crummer, professor of clinical surgery; Dr. John P. Lord, professor of orthopedic surgery; Dr. Edson L. Bridges, instructor in medicine; Dr. William N. Anderson, instructor in physical diagnosis; Dr. Oscar T. Schultz, Cleveland, Ohio, instructor in pathology and bacteriology; Dr. A. A. Johnson, instructor in clinical pathology, and Dr. Claude Mitchell, assistant in physiology.

**New Officers.**—Lancaster County Medical Society at Lincoln, December 6: president, Dr. Henry J. Lehnhoff; secretary-treasurer, Dr. Harry Winnett Orr, both of Lincoln.——Adams County Medical Society at Hastings, December 3: president, Dr. Franklin Schaufelberger, Hastings; secretary-treasurer, Dr. Alma J. Chapman, Ingleside.——Tri-County (Brown, Keya Paha and Rock) Medical Society at Ainsworth: president, Dr. George O. Remy, Ainsworth; secretary-treasurer, Dr. James C. Tucker, Long Pine.

**Personal.**—Dr. Edmund B. Fulliam, Shelby, has been appointed division surgeon for the Union Pacific Railway. ——Dr. Benjamin R. McGrath, Grand Island, has leased the General Hospital for three years from the Grand Island General Hospital Corporation. The institution will be operated as in the past.——Dr. Tenny T. Harris, Omaha, was elected supreme vice archon of the Pi Beta Phi medical fraternity at its recent meeting in Minneapolis.——Dr. Solon R. Towne of Omaha sustained a fracture of the clavicle and a rib while endeavoring to quiet a fractious horse, October 23.——Dr. John H. Vance, Omaha, was operated on in Rochester, Minn., for the removal of gall-stones, October 9.——Dr. Davis, York, has been appointed pathologist to the Hastings State Hospital.

## NEW YORK

### New York City

**Biggs Resigns.**—Dr. Hermann M. Biggs has resigned his office of chief medical inspector in the Department of Health. Dr. Biggs has been in the service of the city for twenty-six years and it is to him that credit is largely due for keeping the Department of Health abreast of the times. His resignation is regretted on all sides.

**New Classification in Tuberculosis Clinics.**—The new classification and results of treatment recommended by the National Association for the Study and Prevention of Tuberculosis was recently brought up for discussion by the Health Department in response to a request from the secretary of the national association as to whether the Health Department regarded this classification as feasible for use in its clinics. The new classification, which it is believed offers many advantages over the old, will be adopted Jan. 1, 1914.

**Raising Funds for Washington Heights Hospital.**—A ten days' campaign for the purpose of raising $150,000 for this institution was begun on December 8 and is to be continued for ten days. During the first four days of the campaign $25,982 was raised. The hospital now occupies two made-over dwellings, from which it is soon to be ousted and the fund is for the purpose of erecting a permanent home for the hospital. Last year 7,000 cases were treated, 1,200 ambulance calls answered and 5,000 dispensary cases were treated.

**Sale of Mercury Regulated.**—The Department of Health has announced that restrictions have been placed on the sale of bichlorid of mercury. The amendment of the Sanitary Code which has been adopted reads as follows: "Bichlorid of mercury, otherwise known as corrosive sublimate, shall not be held, kept, sold or offered for sale at retail in the dry form except in colored tablets individually wrapped, the wrapper to have the word 'poison' in plain letters conspicuously placed, and dispensed in sealed containers of glass, conspicuously labeled with the word 'poison' in red letters." This ruling does not apply to tablets containing one-tenth of a grain or less of the drug.

**The Safety Exhibit.**—The first International Exhibit of Safety and Sanitation was opened December 11 and continued until December 20 in the Grand Central Palace. Among the features of the exhibition were exhibits of national governments. The United States showed how it cares for soldiers and sailors in times of peace and war, including a field hospital and ward rooms. The actual conditions of camp life were reproduced as regards sanitation, and preventive measures against typhoid fever and yellow fever. The Public Health Service showed the protective measures that are being enforced in mines. The British Home Office and the Board of Trade showed the government activities in England for protection in factories and workshops. Switzerland illustrated the methods that it has adopted for stamping out the white slave traffic. There are more than 350 delegates attending the sessions of the conference, which are held daily in connection with the exhibition.

**Babson's Tables on Medical Guesses.**—Roger W. Babson's charges, based on statistics from hospital records, accusing physicians of incorrectness in making diagnoses, have been refuted and explained by Dr. Sigismund S. Goldwater of Mount Sinai Hospital. Dr. Goldwater points out the fallacies in Babson's statistics and accounts for the high percentage of "bad guessing" by the fact that there are too few post-mortem examinations in this country. He favors legislation requiring such examinations in all public hospital death cases in order to give physicians the opportunity to correct their mistakes in similar cases that they may have in the future. Dr. Goldwater shows that in New York City post-mortem examinations are had on only from 7 to 24 per cent. of deaths, while in Europe the number ranges from 58 to 97 per cent. Dr. Goldwater also points out that many of the so-called discrepancies are not real but only apparent because the lay mind is not in a position to appreciate all the factors involved.

## NORTH CAROLINA

**Personal.**—Dr. Milton R. Gibson, Maxton, announces that he will remove to Raleigh, January 1, where he will limit his work to the eye, ear, nose and throat.——Dr. James W. Kornegay, Mount Olive, was stricken with cerebral hemorrhage in Goldsboro, December 8, and is reported to be critically ill.

**Dairies Must Be Sanitary.**—The supreme court of North Carolina, in the case of the City of Asheville against H. L. Nettles, dairyman, has sustained the Asheville milk ordinance, prescribing a license tax of one dollar per cow and specifying standard sanitation to be observed in the management of dairies and the marketing of milk.

**New Officers.**—Third District Medical Society, first annual meeting in Wilmington, December 3: president, Dr. James L. Nicholson, Richlands; secretary-treasurer, Dr. Earnest S. Bulluck, Wilmington.——Guilford County Medical Society at Greensboro, December 5: president, Dr. John A. Williams; secretary-treasurer, Dr. Parran Jarboe, both of Greensboro.——Seventh District Medical Society at Lincolnton, December 5: president, Dr. John B. Wright, Lincolnton; secretary, Dr. Robert H. Lafferty, Charlotte. The next meeting will be held in Concord.

## OHIO

**Place of State Meeting Fixed.**—The Ohio State Medical Association is said to have accepted the invitation tendered it by Columbus, and will meet in that city May 5 to 7, 1914, holding its sessions in Memorial Hall.

**Personal.**—Dr. Howard M. Francisco has been appointed assistant physician and pathologist at the Cleveland State Hospital.——Dr. Sherman Wolcott suffered a cerebral hemorrhage at his home near Gahanna, September 8.——The office of Dr. Frederick L. Lewis, Akron, was destroyed by fire, November 26.

**New Officers.**—Ashland Academy of Medicine, organized December 5: president, Dr. Robert C. Kinnaman; secretary-treasurer, Dr. Jacob Fridline.——Tuscarawas County Medical Society: president, Dr. Robert A. Goudy, Newcomerstown; secretary-treasurer, Dr. George T. Haverfield, Uhrichsville.——Montgomery County Medical Society at Dayton, December 5: president, Dr. Rufus C. Pennywitt; secretary, Dr. Charles C. McLean (reelected), both of Dayton.——Clark County Medical Society at Springfield, December 8: president, Dr. James E. Studebaker, Springfield.——Wyandot Medical Society at Upper Sandusky, December 4: president, Dr. George O. Maskey; secretary, Dr. Arthur N. Smith, both of Upper Sandusky.

**Society Proceedings.**—The Academy met at the Literary Clubrooms, Monday evening, December 15. The nominating committee submitted the following names of members to act as official candidates for the coming year: president, Dr. A. B. Thrasher; first vice-president, Dr. Sidney Lange; second vice-president, Dr. Dudley Palmer; secretary, Dr. C. T. Souther; treasurer, Dr. A. G. Drury. The program for the evening was one of particular interest. Dr. Paul G. Woolley read a paper on "Multiple Hyalo-Serositis"; Dr. Oscar Berghausen, on "Syphilis of the Liver"; Dr. E. C. Steinharter, on "Experimental Gastric Ulcer in the Rabbit."——Dr. J. Edward Pirrung was the host at the last meeting of the Obstetrical Society which met at the Alms Hotel December 11. A very interesting paper was read by Dr. Bonifield, dealing with "After-Treatment of Abdominal Section." A few of the many debatable theories advanced in the paper were early purgation following abdomnial section, denial of sedatives for the relief of pain and the substitution of hot water by mouth or rectum to take the place of ice for the relief of thirst. The paper was very freely discussed by every member present, after which a bountiful lunch was served.

### Cincinnati

**Prevention of Cancer.**—At the annual celebration of the Founders and Emory Memorial Day at the Ohio Mechanics' Institute a lecture was delivered, December 16, by Dr. E. Gustav Zinke on "Cancer, Its Cause, Prevention and Cure."

**Personal.**—Dr. Simon P. Kramer has been appointed professor of clinical surgery in the University of Cincinnati.——Dr. Henry L. Woodward has been appointed senior physician to the Cincinnati Hospital, vice Dr. Frederick Forchheimer, deceased.——Drs. S. Oscar Berghausen, Clement C. Fihe, Starr Ford and Arthur E. Osmond have been added to the junior staff of the institution.

**Councilor District Meeting.**—On December 8, the First Councilor District Medical Association held its annual meeting. Clinics were arranged at the various hospitals in the morning and in the afternoon a session was held in the amphitheater of the City Hospital, where addresses were made by the president, Dr. Herschel Fisher, Dr. A. W. Binckley of the Ohio State Liability Board of Awards, Drs. Martin H. Fischer and Sidney Lange, Cincinnati, and Dr. John T. Geraghty, Baltimore. The evening session of the society was held by invitation with the Cincinnati Academy of Medicine, and at this session addresses were delivered by Dr. George A. Fackler, president of the Ohio State Medical Association, and Dr. George H. Simmons, Chicago.

**Sex Education Discussed.**—At the meeting of the Medico-Civics Society, November 20, the paper of the evening was presented by Dr. Philip Zenner on "Sex Education in the Public School." The speaker treated the subject from the point of view of home instruction and school instruction, preferring the former and emphasizing the necessity for the latter, because of the unwillingness or inability of parents to undertake the task of imparting proper knowledge along these lines to their children. Dr. Elizabeth Campbell opened the discussion and urged that the teachers be especially trained for this work in order to be able to present the subject to their pupils in a proper and convincing manner. The general consensus of opinion appeared to be that while the necessity for sex education in the public schools is at once urgent and apparent, yet the matter is one that requires so much tact, special thought and preparation on the part of the educator that for the present, at least, it should be postponed.

## PENNSYLVANIA

**Hospital Building.**—The Mercey Hospital, Johnstown, plans to build a new administration and ward building, to cost about $50,000.

**Home for Incurables Needed.**—In the annual report of General Agent Bromley Wharton to the State Board of Public Charities, recommendation was made for the establishment of a state institution especially devoted to the care of cases of incurable diseases, such as cancer and other wasting disorders.

**Personal.**—Dr. F. B. Thomas has returned from Europe and opened an office in Dorranceton.——Dr. Richard G. Burns, Pittsburgh, has been appointed superintendent of the bureau of sanitation in the department of public health at Pittsburgh, vice Dr. H. K. Battey, deceased.——Dr. Charles J. Keim has been elected burgess of the borough of Cabasauqua.

**Library Presented to Medical School.**—The library of the late Prof. Ernest Ziesler, for many years professor of pathology at the University of Freiburg, purchased for the University of Pittsburgh by Mr. Richard Beatty Mellen was formally presented to the University at a meeting held in the University Club, Pittsburgh, December 5. The addresses of the evening were given by Dr. William H. Welch, Baltimore, and Mr. Harrison W. Carver, Pittsburgh.

**New Officers.**—Oil City Medical Club, December 5: president, Dr. Frank B. Jackson; secretary, Dr. Sylvester W. Sellew.——Physicians' Association of the Bethlehems, December 4: president, Dr. Milton H. Herbein, South Bethlehem; secretary, Dr. Christian A. S. Kemper, Bethlehem.——Jefferson Medical Club Alumni Association of Northeastern Pennsylvania at Scranton, December 4: president, Dr. James N. White, Scranton; secretary, Dr. Frederick L. Van Sickle, Olyphant.

**Health Commissioner Sues Town.**—State Health Commissioner Dixon on December 3, instituted suit against the town of Coudersport for the recovery of $145,000 in fines. It is charged that the borough failed to observe a decree of the governor, attorney general and commissioner of health directing it to "discontinue the discharge of sewage into a stream draining into the Allegheny River. A fine of $500, and a penalty of $50 a day for each day of failure to observe the decree is claimed.

### Philadelphia

**Bazaar for Ambulance.**—The Hospital of the Woman's Medical College held its seventh annual bazaar, December 6, the proceeds from which are to be devoted to the purchase of an ambulance.

**Personal.**—Dr. Hubley R. Owen has been reinstated as chief police surgeon of the city.——Dr. William Campbell Posey, who has been seriously ill with pneumonia, is reported to be convalescent.——Dr. Arthur Dare sailed for Europe, December 12.

## TEXAS

**Health Bulletin Adopted.**—Gaines, Hunt and Fayette counties have adopted the monthly bulletin of the State Board of Health as a supplementary text-book on health.

**Sanatorium Addition.**—The annex to the Scott and White Sanitarium, Temple, erected at a cost of $50,000, which is nearly ready for occupancy, will double the capacity of the institution which will then be able to accommodate two hundred patients.

**Personal.**—Dr. Bascom Lynn, superintendent of the State Tuberculosis Colony, Carlsbad, has resigned, to take effect January 1.——Dr. L. S. McKane, special representative of the State Board of Health, has returned after three months in Tampico, Mex.——Dr. Malone Duggan, San Antonio, is reported to be ill in Johns Hopkins Hospital, Baltimore.

**Quarantine Edict Revoked.**—The governor in a proclamation dated November 28 revoked his quarantine proclamation of April, 1913, which imposed certain conditions on all vessels from all ports south of 25 degrees north latitude and entering ports of this state, this proclamation to take effect on and after December 1. The section relating to entrance of vessels infected with contagious diseases into Texas ports will remain in full force, and quarantine is furthermore declared "against all person or persons infected or liable to be infected with small-pox, yellow fever, cholera, typhus fever, bubonic plague or other dangerous communicable diseases, whether within or without the state of Texas."

**New Officers.**—Grayson County Medical Association at Sherman, December 3: president, Dr. Otto Carl Ahlers, Sherman; secretary-treasurer, Dr. Davis Spangler.——McLennan County Medical Society at Waco, December 2: president, Dr. James M. Witt; secretary-treasurer, Dr. D. L. Eastland, both of Waco.——Jefferson County Medical Society at Beaumont, December 1: president, Dr. Louis Goldstein; secretary-treasurer, Dr. Wilbur F. Thomson, both of Beaumont.——Dallas County Medical Society at Dallas, December 1: president, Dr. Calvin R. Hannah; secretary, Dr. Royal S. Loving (reelected), both of Dallas.——Jasper and Newton County Medical Society at Kirbyville, November 25: president, Dr. B. A. Swinney, Newton; secretary, Dr. Dru McMickin, Kirbyville.——Trinity County Medical Society at Trinity, November 20: president, Dr. Charles H. Bradley, Groveton; secretary-treasurer, Dr. William H. Pope, Jr., Trinity.——El Paso-Big Springs Medical Association at Abilene, November 18: president, Dr. Granville T. Hall, Big Springs; secretary, Dr. W. R. Smith, Colorado.——San Antonio Academy of Medicine, organized November 10: president, Dr. Charles A. R. Campbell; secretary-treasurer, Dr. R. A. Roberts.

## VIRGINIA

**Presentation to Secretary.**—At a meeting of the South Piedmont Medical Society in South Boston, the third Tuesday in November, a handsome silver service was presented by the society to its secretary, Dr. George A. Stover, South Boston.

**The James Thomas Lectures.**—Dr. Jacques Loeb, director of the department of experimental biology of the Rockefeller Institute for Medical Research, conducted the thirty-fourth annual course at Richmond College under the James Thomas lecture endowment, December 11 and 12. The first lecture was on "Artificial Parthenogenesis" and the second on "Determinism in the Animal World."

**New Officers.**—Richmond Academy of Medicine and Surgery, December 9: president, Dr. Charles V. Carrington; secretary, Dr. Mark W. Peyser (reelected for the twenty-first term).——Medical Faculty of Petersburg, November 21: president, Dr. William C. Powell; corresponding secretary, Dr. George H. Reese; recording secretary, Dr. Leverett S. Early.——Roanoke Academy of Medicine: president, Dr. William L. Powell; secretary, Dr. William W. S. Butler, Jr.

## GENERAL

**Tri-State Association to Meet.**—The sixteenth annual session of the Tri-State Medical Association of the Carolinas and Virginia will be held in Wilmington, N. C., Feb. 18 and 19, 1914, under the presidency of Dr. Southgate Leigh, Norfolk, Va. Dr. Charles T. Harper, Wilmington, is chairman of the committee of arrangements.

**Soo Line Surgeons Hold Meeting.**—At the seventh annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association held at Milwaukee, December 5 and 6, the following officers were elected: Dr. John M. Dodd, Ashland, Wis., president; Dr. John Steele Barnes, Milwaukee, vice-president; Dr. John H. Rishmiller Minneapolis, secretary-treasurer (reelected), and Drs. John H. Rishmiller, Minneapolis; Chas. A. Steward, Duluth; Chas D'A. Wright, Minneapolis; Alexander J. McCannel, Minot, N. Dak., and John M. Crafts, Minneapolis, censors. Sault Ste. Marie, Mich., was selected as the next place of meeting.

**Infectious Diseases.**—During the first week in December contagious diseases have been reported, among others, from the following places: Diphtheria: Minneapolis, 160 cases; Litchfield, Minn., twenty-four cases; Augusta, Kan.; Wilkes-Barre, Pa.; Detroit, 200 cases; defective methods were found in the manner of releasing from quarantine, which was said to account for the spread of the disease. Dr. Edward H. Hayward, bacteriologist of the health department, resigned.

The two-culture method has been adopted: Woodland, Cal.; Grass Valley, Nev.; Davenport, Iowa. At Jefferson City, Mo., sixteen prisoners were barred from the state penitentiary on account of exposure to a case of diphtheria in the jail at St. Louis before being taken to Jefferson. Small-pox: In order to prevent the spread of the epidemic at Joliet, Ill., almost universal vaccination was enforced by the city and health authorities. December 2 Indianapolis had eight cases reported in forty-eight hours. Shelbyville, Ky., reports a number of cases. Walla Walla, Wash., has a number of cases. DeRidder, La., where compulsory vaccination has been enforced. Kansas City, Mo. Toledo, Ohio, where a third school has been closed on account of a few cases. At Dutzow, Mo., the school was closed. Scarlet fever: Liberty, Tioga County, Pa.; Wilkes-Barre, Pa.; Mount Pleasant, Pa., school closed. An outbreak occurred among the Indians on the Crow Reservation, Montana, and quarantine of the reservation was declared by the State Board of Health.

**Civil Service Examination.**—The United States Civil Service Commission announces an open competitive examination for medical assistant, for men only, on Jan. 12, 1914. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at $1,800 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. The duties of this position will be to study the claims and representations made in conjunction with proprietary remedies, look up medical literature, assist in preparing cases, etc., under the Food and Drugs Act. A knowledge of French and German is desirable. Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

| Subjects | Weights |
|---|---|
| 1. General education and medical training.................. | 35 |
| 2. Practical or professional experience and fitness......... | 45 |
| 3. Publications or thesis ........................... | 20 |
| Total ........................................ | 100 |

Graduation from a medical school of recognized standing and at least three years' subsequent experience in the practice of medicine, or two years' subsequent experience in either pharmacological investigations or the actual examination of drug products with reference to the claims made therefor by manufacturers, are prerequisites for consideration for this position. If a thesis is submitted under Subject 3 it must present the results of original investigational work on the part of the applicant in some phase of medicine or pharmacology. Statements as to training, experience and fitness are accepted subject to verification. Applicants must have reached their twenty-fifth but not their forty-fifth birthday on the date of the examination. Under an act of congress applicants for this examination must have been actually domiciled in the state or territory in which they reside for at least one year previous to the date of the examination. This examination is open to all men who are citizens of the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for Application Form 304 and special form, to the United States Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, Post Office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed and filed, in complete form, with the commission at Washington prior to the hour of closing business on Jan. 12, 1914. In applying for this examination the title "United States Civil Service Examination, Medical Assistant (Male)" should be used.

## CANADA

**Library to Be Established.**—The Medical Council of Saskatchewan has decided to establish a medical library at Saskatoon and not at Regina as originally planned.

**Typhoid in Halifax.**—Halifax, N. S., has been experiencing an epidemic of typhoid fever. An emergency hospital for fifty patients has been secured, and an investigataion is proceeding into the cause of the outbreak.

**Instruction in Tuberculosis.**—For the benefit of the students of the Manitoba Medical College, the provincial sanatorium at Ninette will be utilized for clinical instruction in tuberculosis. This is the first departure in this direction in Canada.

**Prize for Research Work.**—A prize to be awarded annually or biennially has been established in connection with research work in the University of Manitoba. It will be for the essay on the best work done in connection with physiology or physiological chemistry.

**Personal.**—Prof. J. George Adami, McGill University, Montreal, addressed the Denver County Medical Society December 12 on "Intestinal Stasis."—Dr. John Taylor Fotheringham, Toronto, was the guest of the evening at the annual dinner of the *Oxford County Medical Association, October 29.*

**Will Accept Registration Certificates.**—The Manitoba Medical Council has decided to accept for registration under the provisions of the Dominion Medical Act, all applicants who present a certificate of registration on the Dominion Medical Council register, whether the same has been obtained by examination or by virtue of ten years' previous practice in any province, subject only to proof of identity, and payment of the registration fee of $100.

**Hospital News.**—Toronto city council has made a supplementary grant of $8,272.20 to the Hospital for Sick Children. ——Forty-seven patients were treated at the Victoria Hospital, Fredericton, N. B., in October. One death occurred. ——The Royal Victoria Hospital at Barrie, Ont., has just completed its sixteenth year. During the past year 418 patients received treatment. There were thirty-nine births in the year and twenty-six deaths.——The General Hospital, Welland, Ont., treated 437 patients during the year ended September 30. Twenty-five deaths and seventeen births occurred. More room is to be provided for this hospital and a nurses' home in the immediate future.——Toronto has now a measles hospital with accommodation for thirty patients. It was formerly the Nurses' Home at the old General Hospital.——The Montreal Dispensary will erect a new building.——The central building of St. Boniface Hospital, Winnipeg, is to be rebuilt.——St. Paul's Hospital at Saskatoon, Sask., newly opened, has accommodation for 100 patients. The cost of the building was $175,000.——The Waddell Memorial Hospital at Canora, Sask., has been completed and Dr. Gray of Montreal has been appointed superintendent.—— Vancouver General Hospital will soon add an administrative building and nurses' home. The former is to cost $80,000 and the latter $115,000.

## LONDON LETTER

*(From Our Regular Correspondent)*

LONDON, Dec. 6, 1913.

### The National Insurance Act

The magnitude of medical services under the national insurance act is shown by some figures recently given by a member of the government, Mr. Churchill, who asserts that no greater administrative achievement has stood to the credit of the civil service of any country than the establishment in a few months of a tremendous universal system and organization of insurance. Although the act has been working for only nine months, 13,700,000 persons have been insured, and their affairs are being administered through 233 insurance companies and upward of 23,500 societies; 22,000,000 visits have been paid by 20,000 panel physicians, and nearly 12,000,000 cases have been treated. The cost of medical benefit has been $22,500,000. Sanatorium benefit has been provided for 36,000 persons.

The act is regarded by various sections of the profession with very different feelings. It cannot be denied that those engaged in industrial practice have benefited financially. Remuneration is much better than under the old contract practice of societies—nearly twice as much—and the physician is free from the domination of the clique which rules every lodge and has power to deprive him of his appointment because of some unreasonable charge by a member. Now if a patient is not satisfied with his physician, all he can do is transfer himself to the panel of another doctor. The increased remuneration obtained under the act has attracted physicians into industrial practice in such numbers that there is a shortage in other directions. Appointments under education and asylum authorities, which would have been sought by fifty applicants before, have been advertised in the medical journals for six or eight months without bringing a single answer, although the salaries have been doubled. Formerly young physicians were glad to take appointments at salaries ranging up to $1,500 a year. On the other hand, considerable dissatisfaction prevails in the ranks of those who have not accepted service under the act (non-panel physicians). They complain that their patients are compulsorily transferred to panel physicians, though they appear in many cases to have benefited instead of losing financially. This paradox is explained by the fact that at the time of the struggle of the British Medical Association with the government political feeling ran high, and the conservative press as well as a section of the profession held up to opprobrium those who would take service under the act, alleging that they were an inferior order of practitioners. Moreover, the large and unnecessary amount of clerical work thrust on physicians at the inauguration of the act proved most onerous and made inroads on the time required for professional work. The opposition press exaggerated the evil and represented panel physicians as so overwhelmed with work that they could not give proper attention to patients. The result was that the fact that a physician was not on the panel was a recommendation. He was considered to be a superior man, and to have sufficient time to attend to private patients. Though medical benefits under the act are working smoothly and the number of complaints is exceedingly small considering the enormous number of people involved, the panel practice is in many ways an improvement on the old contract practice; it still has some of the evils inseparable from contract practice. Time is wasted in attending hypochondriacs and others with very little the matter who wish to avail themselves of the free and unlimited drugging provided. The incentive to individual effort in the case of private patients is wanting. Examination tends to be perfunctory and treatment routine.

### Radium for Hospitals

At a meeting of the governors of the Middlesex Hospital, Prince Alexander of Teck announced that he had made a suggestion to the council of King Edward's Hospital Fund with the object of securing a more economical provision of radium for use in the London hospitals. In order to avoid the capital of these hospitals being drawn on for the purpose he asked the council to purchase a quantity of radium and allow all the London hospitals to utilize the emanations which could be collected from it at the price of their production. The Middlesex Hospital is the only one of the general London hospitals which contains special wards for the treatment of cancer and a special laboratory for its investigation. It has recently been compelled to withdraw from its capital $5,000 for the purchase of radium. Sir Alfred Pearce Gould, surgeon to the hospital, pointed out the necessity for care in inferring that a case of cancer had been cured by radium, for the disease sometimes underwent spontaneous cure. Recently a man had been discharged from the hospital in robust health although he had been ill for two years with cancer which was pronounced uncurable. Without radium or any specific treatment or operation he recovered. In some cases they had the most striking results; one application of a tube of radium had been followed by rapid disappearance of malignant growth. On the other hand, similar growths had been treated in the same way with no improvement. He had also known half of an extensive area of the disease quickly removed by radium while the other half was entirely unaffected. In some cases burns occurred very rapidly. It would not be accurate to say that radium was a cure for cancer in the same way that drugs were specifics for some diseases. So far as they knew there was no hope that radium would be able to deal with cases in which cancer had diffused itself among the internal organs, but so long as the disease was localized the results were sufficient to say that radium was a more hopeful remedy than anything except operations.

### The Leprosy Problem in the British Empire

Dr. H. Bayon, research bacteriologist to the union government of South Africa, has delivered a lecture with the object of having the government institute a system of registration and segregation of lepers. He said that at present there were from twenty-five to fifty lepers in England, and the simple precautions taken by these unfortunates was sufficient to prevent contagion. In India, on the other hand, there had been an increase of lepers from 100,000 to 110,000. In South Africa the increase was more marked. In Basutoland the principal medical officer counted 300 lepers twenty-five years ago. Last year they numbered from 800 to 900. He submitted that only by segregation could the disease be coped with. Sir Malcolm Morris said that the lepers in London were hunted from one lodging-house to another. Their pitiable condition had caused some benevolent persons to attempt to provide some small institution in which they could be segregated and cared for, but it was necessary to proceed with care because if it became known that a comfortable home was provided for lepers in London they would be attracted here from other countries.

## BERLIN LETTER

*(From Our Regular Correspondent)*

Berlin, Nov. 23, 1913.

### *Personal*

On the occasion of his transfer from Greifswald to Berlin, Professor Loeffler was elected an honorary citizen of the city of Greifswald.

### The Struggle between the Insurance Societies and Physicians

The development of this struggle is going on in the form decided on by the Aerztetag. The present contracts are not being renewed, so that a great number of the Krankenkassen have no longer any physicians under contract to attend their policy-holders. It is reported from various sources that an attempt is being made to resume negotiations for a new agreement between the two parties, but it is scarcely to be assumed that our highest imperial authority will take this step.

### Foundation of an International Society for Sex Investigation

An international society for sex investigation was founded in Berlin November 16, the Internationale Gesellschaft für Sexualforschung. The organizations which are active at present in the field of sexual investigation are chiefly concerned with practical and humanitarian purposes, such as hygienic, educational and legal, social and moral reform. The new society is to devote itself to a purely scientific investigation of sexual problems. For this reason the man at the head of the society is not a physician, but Prof. J. Wolff, who is professor of economics at the technical high school in Charlottenburg (*Lehrender Nationalökonom*). It is also a notable fact that a professor of theology in the Berlin University belongs to the executive committee. In the meeting for organization he emphasized the fact that he hoped for advantages from the new society in three fields, psychology, economics and history.

### Statistics in Regard to Venereal Disease in Germany

The association of German statisticians has determined to secure information with reference to the number of venereal patients at present under medical treatment. As experience has shown and as every practitioner knows, such an investigation will not give the entire number of patients, but the knowledge obtained from the large number of cases available will be of value. A committee appointed by the association in conjunction with the executive committee of the German association for combating venereal diseases has elaborated a plan by which it is to be determined how many persons with venereal disease were under medical treatment in the period from November 20 to December 20, 1913, inclusive. This is determined by including in a table the number of patients visiting the office in this time in such a manner that each patient is reckoned only once. Only chancroid, gonorrhea and syphilis with their consequences are reckoned among venereal diseases. All non-venereal genital affections, such as acuminate condyloma, non-gonorrheal urethritis, herpes genitalis, etc., are not included. In view of the extraordinary importance of tabes and paralysis, separate columns are provided for these with a distinction between old cases and those treated for the first time. The cases treated in the public hospitals are collected directly by the statistical bureau.

### Public Care of the Sick in Berlin for 1912

There were treated in the public municipal hospitals 60,578 persons, which is nearly 2,300 fewer than in the previous year. On the average there were 4,165 patients in the hospitals daily, which is on the average nearly 200 fewer per day than in the previous year. The six hospitals occasioned an expense of $1, 837, 500 (7,350,100 marks) with only $19,629 (78,517 marks) receipts, so that the entire remainder of over $1,800,000 (7,250,000 marks) is to be reckoned as expense. To this must be added the interest on the municipal capital involved, so that the total expense reaches $2,187,048 (8,748,193 marks). The average daily expense for each patient is 98 cents (3.93 marks), as compared with 91 cents (3.66 marks) in the previous year. The actual cost for each patient including the interest on the capital has risen from $1.33 (5.32 marks) daily to $1.43 (5.72 marks), a not inconsiderable increase.

### German Universities in 1913

The number of students matriculated in the universities in the German empire, which has doubled since 1896, has risen further during the last summer. As compared with the previous year, the increase is 7,851, and compared with the summer semester of 1903 is about 24,000. The increase during the last ten years is as great as the entire attendance at the German universities thirty years ago. The annual increase for the last year is somewhat smaller than the previous year, so that it may be assumed that the high point of the increase has been passed, which in view of the overfilling of many learned professions may be regarded as desirable. If to the number of matriculated students, the number of those admitted to the lectures is added (3,079 men and 1,027 women) there are at present attending the German universities 64,462 persons (56,910 men and 3,436 women as compared with 56,602 men and 2,959 women in the previous year). As to the attendance of the different departments, theology showed a marked increase with 3,882 students as compared with 3,338 in the previous year, but the principal increase is seen in the department of medicine, to which university students have given the preference for some years. The medical departments have 14,750 students as compared with 13,409 in the previous year and 8,282 five years ago. The next largest increase is in economics and agriculture. Dentistry decreased as a result of higher entrance requirements and longer time of study from 789 to 655, and law from 11,087 to 10,396, and finally students of philosophy from 16,644 to 15,471.

## BUDAPEST LETTER

*(From Our Occasional Correspondent)*

Budapest, Nov. 29, 1913.

### Preventive Inoculations against Typhoid

The chief medical officer of the county of Zemplen asked the minister of public hygiene (also minister of internal affairs) to provide his county with free vaccine in order that those who come in contact with typhoid patients (as nurses and persons engaged in such occupations as earth-working and privy-cleaning) might be vaccinated. At present the chief medical officer will refrain from making vaccination obligatory; but thinks that the state ought to provide free vaccine, which should be prepared in the bacteriologic laboratory of the university. The minister accepted the proposal with great pleasure, and steps were taken immediately to prepare sufficient vaccine in the ministerial laboratory to meet the requests of any counties for vaccine.

### Lack of Cadavers for Dissection in the Anatomic Institutions

A new resolution has been offered at the workmen's insurance office, according to which any member of the sick-clubs who dies without relatives shall be buried by the respective club. As the number of members in Budapest amounts to about 450,000 (out of a population of 900,000), the new rule threatens medical teaching with a cadaver famine, the more so, as the Chevra Kadisha, a Jewish charitable society, provides funerals for all Jewish subjects whose funeral is not attended to by relatives. Considering that the number of medical students amounts to 2,800 in the Budapest University, while the number of cadavers at the disposal of the anatomic institutions had amounted to only 500 a year, it could justly be feared that the successful teaching of anatomy, operative surgery, etc., would be endangered should the resolution of the workmen's insurance office come into force. To prevent this Anton Genersich asked the minister of public instruction to frame a new bill providing that all cadavers not claimed by relatives may be used for purposes of instruction.

### Eclampsia an Anaphylactic Disease

Dr. Oscar Vertes, assistant of the obstetric clinic of the Kolozsvar University (Hungary) has carried out extensive investigations in the bacteriologic laboratory of the Friedrichshain General Hospital (Berlin) as to the pathogenesis of eclampsia. He sums up the results of his investigations as follows: The pregnant organism is on account of the absorbed villous element (proved by Schmorl) in an anaphylactic state. That the chorionic villi which contain both racial (*arteigen*) and individual (*körpereigen*) albumins, are actually capable of producing eclampsia, has been clearly demonstrated in his experiments. Certain similarities have beeen shown between anaphylactic manifestations and the symptoms of eclampsia. The experimental animals which died have similar organic changes to those of persons dying with eclampsia. The albuminuria also strengthens the assumption that eclampsia is a manifestation of anaphylaxis.

# Marriages

Alexander Contee Thompson, M.D., Greeley, Colo., to Miss Mabel Chesley Berry of Washington, D. C., at Greeley, November 26.

Jesse Lee Hagadorn, M.D., to Miss Phyllis Ivy Maughan, both of Los Angeles, at San Bernardino, Cal., December 1.

Asher Reid McMahon, M.D., Memphis, Tenn., to Miss Geraldine Sembower of Bloomington, Ind., December 6.

James Albert Honeig, M.D., Cambridge, Mass., to Miss Florence Imogene Graham, at Boston, December 6.

Earle Edward Tilton, M.D., Boston, to Miss Mary Christie Stephenson of Port Deposit, Md., December 3.

Edgar Dale Downing, M.D., San Francisco, to Miss Marjorie Fraser Cole of Fallon, Nev., December 1.

Nathaniel A. Thompson, M.D., Denver, to Miss Isabel McKenzie of Boulder, Colo., November 28.

Charles Henry Smith, M.D., Weston, Ore., to Miss Zona M. Sapp of Portland, Ore., November 26.

Henry F. Mikel, M.D., Columbia, Mo., to Mrs. Lida M. Ashton of Peabody, Kan., December 5.

James Albert Corscaden, M.D., to Miss Julia Thomas, both of New York City, December 16.

Nelle Malvina Cole, M.D., and George Owen Reed, both of Michigan City, Ind., November 29.

Warren J. Miller, M.D., to Miss Ina C. Bowman, both of Philadelphia, December 4.

Charles M. Raymond, M.D., Edgewood, R.I., to Mrs. A. C. Newell, November 8.

# Deaths

**William Henry Wishard, M.D.,** one of the oldest, most honored and best beloved practitioners of Indiana, died at his home in Indianapolis, December 9, aged 97. He graduated in medicine in the Indiana Medical College, La Porte, in 1849 and was given the ad eundem degree of M.D. by the Medical College of Indiana, Indianapolis, in 1877. He was one of the founders of the Indiana State Medical Society in 1849 and was the last survivor of its charter members. During the Civil War he served as surgeon of the 59th and 83d Indiana Volunteer Infantry. He was for many years a member of the American Medical Association, served as president of the Indiana State Medical Association in 1889 and as president of the Indianapolis Medical Society in 1891. It is said to have been through Dr. Wishard's efforts that President Lincoln issued the first order for the removal of soldiers, disabled by illness or wounds, from the seat of war to their Northern homes. He continued in active practice in Indianapolis until seven years ago and up to within a few months he attended meetings of the local medical society, where he was reverenced as a fine specimen of the old school doctor. The death of Dr. Wishard removes a stalwart pioneer in medicine of the Middlewest, a gentleman of the old school, a practitioner who stood for the highest ideals, and a friend always loyal and true. The Indianapolis Medical Society at a special meeting, December 11, adopted suitable resolutions regarding the death of Dr. Wishard.

**John Green, M.D.** Harvard Medical School, Boston, 1866; LL.D. (honorary) Washington University, 1905; University of Missouri, 1906; a member of the American Ophthalmological Society, and American Otological Society; ophthalmic surgeon to St. Luke's Hospital, St. Louis; professor of ophthalmology in the Medical Department of Washington University since 1886, and at the time of his death professor emeritus; a pioneer oculist of the Southwest; surgeon of volunteers during the Civil War; one of the founders of the American Ophthalmological Society, Harvard Club of St. Louis, St. Louis Archeological Society and St. Louis Academy of Science; died at his home in St. Louis, December 7, from pneumonia, aged 78.

**Archibald Dixon, Jr., M.D.** Bellevue Hospital Medical College, 1891; of El Paso, Tex.; vice-president of the Kentucky State Medical Association, health officer and formerly city physician of Henderson, Ky.; acting assistant surgeon U. S. Army; a specialist on diseases of the lungs; died at his home, October 31, aged 44.

**Frank Le Moyne, M.D.** University of Pennsylvania, Philadelphia, 1863; a member of the Medical Society of the State of Pennsylvania; brigade surgeon during the Civil War and brevetted lieutenant-colonel for conspicuous gallantry in action; once president of the Allegheny County Medical Society; chairman of the Pittsburgh Water Commission; a trustee of the Elizabeth Steel Magee Hospital; one of the founders of the Pittsburgh Hospital for Children and surgeon to that institution and the Western Pennsylvania Hospital; died at his home in Pittsburgh, December 1, aged 74.

**Jerome Dwelly, M.D.** Harvard Medical School, 1847; a member of the Massachusetts Medical Society; a practitioner of Fall River for more than sixty years; once president of the Bristol South District Medical Society; one of the witnesses of the original demonstration of ether anesthesia and the first to administer it in his own community; first city physician of Fall River; medical examiner of Bristol County for fourteen years; one of the finest types of the old-time practitioner; died at his home in Fall River, December 4, aged 90.

**Rockwood Sager, M.D.** Rush Medical College, 1879; a member of the Illinois State Medical Society; for thirty-four years a practitioner of Rockford; died at his home in that city, December 2, from brain tumor, aged 57. At a meeting of the Winnebago County Medical Society December 4, resolutions were unanimously adopted expressing regret at the death of Dr. Sager and sympathy for his family.

**Harry M. Hayes, M.D.** Rush Medical College, 1894; a Fellow of the American Medical Association, and President of the Peoria City Medical Society; formerly commissioner of health in Peoria; died in the Proctor Hospital in that city, December 2, from typhoid fever, aged 42. At a meeting of the Peoria City Medical Society, December 6, resolutions of regret and sympathy were unanimously adopted.

**George Henderson, M.D.** Howard University, Washington, D. C., 1885; a member of the Medical Association of the District of Columbia; formerly a member of the Association of Military Surgeons of the United States; a veteran of the Civil War; for twenty-three years Surgeon-General of the National Guard of the District of Columbia; died at his home in Washington, November 27, aged 70.

**Warren Oscar Plympton, M.D.** College of Physicians and Surgeons, New York City, 1888; formerly professor of surgery in the New York Postgraduate Medical School; attending surgeon to the Daisy Field Hospital, Englewood, N. J., and consulting surgeon to the Mary Immaculate Hospital, Jamaica, L. I., and the Tarrytown Hospital; died at his home in Westport, Conn., November 19, aged 55.

**Nathaniel Heath Street, M.D.** University of Virginia, Charlotteville, 1880; New York University, New York City, 1881; a member of the Medical Society of the State of North Carolina; died at his home in New Bern, December 1, from the effects of a gunshot wound of the brain, self-inflicted, it is believed with suicidal intent, while suffering from melancholia due to ill health, aged 56.

**John Todd, M.D.** Pennsylvania Medical College, Gettysburg, 1857; for fifty-six years a practitioner of Montgomery County, Pa.; for several years a burgess of Pottstown, and for nine years a member of the town council; president of the medical staff of Pottstown Hospital since the establishment of the institution; died at his home, October 27, from senile debility, aged 83.

**Henry J. Evans, M.D.** Hahnemann Medical College, Philadelphia, 1881; president of the Maryland State Homeopathic Society in 1899 and president of Maryland State Board of Medical Examiners in 1888; consulting physician to St. Luke's Hospital; formerly of Baltimore; died at his summer home in Hollidaysburg, Pa., November 30, from pernicious anemia, aged 58.

**Frederick Ogden Marsh, M.D.** Miami Medical College, Cincinnati, 1884; professor of chemistry and toxicology in his alma mater; of Cincinnati; who was committed to Longview Hospital, October 7, suffering from melancholia; died in that institution, November 24, from the effects of wounds believed to have been self-inflicted with suicidal intent, aged 54.

**Hugh Spencer Williams, M.D.** Northwestern University Medical School, 1894; LL.D., D.D., prominent as a clergyman of the Cumberland Presbyterian Church; died at his home in Memphis, Tenn., December 3, from nephritis, aged 68.

**William Hutchinson Merrill, M.D.** College of Physicians and Surgeons, New York City, 1887; formerly a practitioner of Jeckyl Island, Ga., and later of Pepperell, Mass.; died at his home in the latter city, December 2, aged 53.

**Isaiah Carter Turner, M.D.** Meharry Medical College, Nashville, Tenn., 1885; a well-known colored practitioner of Dayton, Ohio, and a member of the National Guard, who served throughout the floods in April of this year; died at the home of his father in Owensboro, Ky., December 1, aged 39.

**William Ernest Miller, M.D.** College of Physicians and Surgeons, Baltimore, 1892; a Fellow of the American Medical Association; a well-known practitioner of Northwestern Baltimore; died in the Franklin Square Hospital in that city, November 23, from cerebral hemorrhage, aged 43.

**Adolphus Woodville Dail, M.D.** Tennessee Medical College, Knoxville, 1891; a Fellow of the American Medical Association; for eleven years a practitioner of Cement, Okla.; died in the Washita Valley Hospital, Chickasha, Okla., November 20, from tubercular peritonitis, aged 44.

**Charles Edward Wachenschwanz, M.D.** University of Jena, 1850; formerly demonstrator of anatomy in Starling Medical College, Columbus, Ohio; a surgeon of volunteers during the Civil War; died at his home in Chillicothe, Ohio, November 7, from senile debility, aged 83.

**Richard Cranch Greenleaf, M.D.** Harvard Medical School, 1870; a trustee of the Lenox Library and Lenox Academy and town assessor for several years; a member of the Massachusetts Medical Society; died at Lawrence, L. I., December 3, from heart disease, aged 68.

**Evan S. Weisiger, M.D.** Pennsylvania University, Lexington, Ky., 1852; surgeon in the Confederate service during the Civil War; for fifteen years state quarantine officer at the mouth of the Brazos River, Tex.; died at his home in Brazoria, Tex., October 8, aged 83.

**Thomas J. McClosky, M.D.** St. Louis College of Physicians and Surgeons, 1889; a member of the Wisconsin State Medical Society; formerly a practitioner of Prairie du Chien and Beloit; died at the home of his sister in Dubuque, Iowa, November 28, aged 53.

**Horace H. Tinker, M.D.** New York Homeopathical Medical College, New York City, 1875; of New York City; died at his summer home in New London, Conn., November 20, from the effects of poison believed to have been self-administered with suicidal intent, aged 61.

**Charles De Witt Rawson, Jr., M.D.** Drake University, Des Moines, Ia., 1905; of Otley, Ia.; who was seriously injured in an automobile accident near Otley, November 13, died at his home in that city from the effects of his injuries, November 19, aged 31.

**James Lawrence Turner, M.D.** University of Georgetown, Washington, D. C., 1864; a veteran of the Civil War and for many years a practitioner of New York City; died at his home in Corona, Long Island, November 16, from pneumonia, aged 75.

**Thomas Edwin Nott, Jr., M.D.** Tulane University, New Orleans, 1885; formerly a practitioner of Spartanburg, S. C., but recently a resident of Brownsville, Tex.; died in that place, November 24, from tetanus due to a needle wound, aged 48.

**Allen L. Woode, M.D.** Hygeio-Therapeutic College of New York City, 1863; a resident of Flatbush, L. I.; for thirty-five years president of the Clinton Street Baths, Brooklyn; died in the Paul Kimball Hospital, Lakewood, N. J., October 25, aged 73.

**Charles Young Moore, M.D.** University of Toronto, Ont., 1871, and silver medallist of his year; for more than forty-five years a practitioner of Brampton, Ont., and medical officer of health of that place; died at his home, September 11, aged 66.

**Anita E. Tyng, M.D.** Woman's Medical College, Philadelphia, 1864; at one time a medical missionary in the Orient and formerly a member of the Rhode Island Medical Society; died at her home in Berkeley, Cal., October 16, aged 73.

**H. G. Patterson** (license, Kansas, 1901); a veteran of the Civil War; for thirty years a practitioner of northwestern Kansas; medical director of the Kansas State G. A. R. in 1907; died at his home in Rexford, November 29.

**Dr. Charles Morton Clifford, M.D.** Miami Medical College, Cincinnati, 1893; a Fellow of the American Medical Association; formerly a practitioner of Cynthiana, Ky.; died at his home in Le Roy, Ill., November 24, aged 46.

**Alexander S. Cornell, M.D.** Detroit College of Medicine, 1894; was instantly killed December 2, at his home in Copemish, Mich., by his own automobile, which he was cranking without having put the machine out of gear.

**Woodson B. Fearing**, M.D. University of Maryland, Baltimore, 1881; a member of the Medical Society of the State of North Carolina; of Manteo; died in the Sarah Leigh Hospital, Norfolk, Va., December 2, aged 54.

**Robert Lyon Sanderson**, M.D. Cleveland University of Medicine and Surgery, 1857; for many years medical officer of health for the township of Yarmouth, Ont.; died at his home in Sparta, Ont., September 23, aged 81.

**John Gould**, M.D. University of Michigan, Ann Arbor, 1890; for four years assistant superintendent of the Yankton (S. Dak.) State Hospital for the Insane; died at his home in Denver, Col., November 24, aged 55.

**W. L. Simmons**, M.D. Graffenburg Institute, Dadeville, Ala., 1858; for more than forty years a practitioner of Weatherford, Tex.; died in a sanatorium at Fort Worth, November 19, from senile debility, aged 81.

**John J. Baker**, M.D. Physio-Medical College of Indiana, Indianapolis, 1875; formerly of Westfield, Ind., and Indianapolis; died at the home of his daughter in Peru, Ind., October 29, aged 62.

**Meredith Taylor** (license, Missouri, 1883); formerly circuit court judge of Jasper County; died at the Odd Fellows' Home, Liberty, Mo., September 24, from cerebral hemorrhage, aged 63.

**George Washington Wise**, M.D. Medical College of Georgia, Augusta, 1861; for many years a practitioner of Trenton, S. C.; died in the Columbia, S. C. City Hospital, November 4, aged 74.

**Ellsworth Henry Way**, M.D. Cleveland University of Medicine and Surgery, 1874; founder of the Riverside (Cal.) Hospital; died at his home in Riverside, October 21, aged 52.

**Salmon Stebbens Douglas**, M.D. Chicago Homeopathic College, 1892; coroner of Delaware County, Iowa; died at his home in Earlville, November 28, of pneumonia, aged 45.

**Thomas Henry Ullyot**, M.D. University of Southern California, Los Angeles, 1908; died at his home in Pomona, Cal., November 7, from ptomain poisoning, aged 32.

**William M. Edwards**, M.D. University of Alabama, Mobile, 1880; died at his home in St. Elmo, Mobile County, November 26, from cerebral hemorrhage, aged 59.

**Alfred Layman**, M.D. Hahnemann Medical College, Philadelphia, 1882; died at his home in Philadelphia, December 6, from carcinoma of the stomach, aged 70.

**Fleming B. Todd** (license, Missouri, 1883); for more than forty years a practitioner of North Central Missouri; died at his home in Madison, September 18.

**James H. Willis** (license, fifty years' practice, Kentucky, 1895); a veteran of the Mexican War; died at his home in Lawrenceburg, November 10, aged 90.

**Henry C. Williams** (license, Michigan, 1900); for more than fifty years a practitioner of Morenci, Mich.; died at his home in that village, November 3, aged 79.

**Leandre Coyteaux Prevost**, M.D. Ecole de Médécine et de Chirurgie, Montreal, 1874; of Ottawa, Ont.; died at Saranac Lake, N. Y., November 6, aged 63.

**Joseph G. Williamson**, M.D. Bennett Medical College, Chicago, 1882; formerly of LaGrange, Ill.; died at his home in Montague, Mich., November 5.

**Richard David Hailey**, M.D. University of Louisville, Ky., 1909; died at his home in Olive Hill, Tenn., August 6, from pernicious malarial fever, aged 38.

**John Oscar Stevens** (license, Texas, 1898); of Hobbs; was shot and instantly killed while driving through Camp Springs, Tex., November 13, aged 46.

**Clarence E. Frey**, M.D. Hospital College of Medicine, Louisville, 1906; died at his home in Louisville, November 30, from pneumonia, aged 32.

**Robert Charles Meyers**, M.D. University of California, San Francisco, 1880; formerly of San Francisco; died in Los Altos, Cal., November 23.

**Julius L. Schauer**, M.D. College of Physicians and Surgeons, Baltimore, 1891; formerly of Milwaukee; died in Chula Vista, Cal., August 26, aged 48.

**Gerald Waddell**, M.D. McGill University, Montreal, 1907; of Montreal; died in Chatham, Ont., July 13, from carcinoma of the stomach, aged 29.

**Calvin Lutz**, M.D. Victoria College, Coburg, Ont., 1868; died at his home in Gananoque, Ont., September 14, aged 62.

# The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

## THE JIREH DIABETIC FOOD COMPANY

### The Company Rises to Explain in a Brief Note of One Thousand Words

Exploiters of fraudulent and dangerous pharmaceutical products have no love for The Journal. When such products are exposed in these pages, their manufacturers seldom reply to the criticisms except through indirect channels. Then the replies are frequently replete with billingsgate and denunciation of The Journal and its editor, the Association and the medical profession generally.

We have, at different times, had to call the attention of the public and the medical profession to the fraudulence and dangers of some of the products of the Jireh Diabetic Food Company. We have shown that the Jireh company lied boldly and directly so long as it could do so without getting into the courts, and that it lies inferentially still; we have shown that Jireh flour had practically as much carbohydrate as ordinary flour; we have shown that, probably to escape prosecution under the Food and Drugs Act, the Jireh concern has coined the word "diatetic" and substituted it for the word "diabetic," which used to appear in its advertisements; we have shown that the claim made for the Jireh products that they are "starch-changed" was a false one, and that the company has modified this to "starch-treated," presumably to avoid being haled into the courts under the "pure food law"; we have shown, in short, the unreliability both of the Jireh concern and of its products.

Two or three weeks ago a New York physician wrote to The Journal for information regarding the Jireh products. We sent him such matter as had been published on the subject, and he showed this material to a patient who was using the Jireh products. The patient, in turn, expressed her opinion of the product to the retailer from whom she had been purchasing it. A day or two later she received a letter from the Jireh Diabetic Food Company, which, in spite of its length and discursiveness, we publish in full, so that physicians may know just what this company thinks of them. The letter, which is dated Nov. 20, 1913, really belongs in the "Knocks and Boosts" department, but its length prevents its use there. Here it is:

> "We learned through Mess. Cushman Co. that you are a constant user of Jireh Foods for some time past, and that recently a certain derogatory statement was brought to your attention relative to our product. We feel an explanation is due you for two reasons.
>
> "First, because we want you to continue using Jireh Foods and thus receive the benefits of the same; and second, that the remarks called to your attention are not only libelous, but are in no way pertinent enough to detract from the value of our product. In the first place, we want to state that the particular journal in question has been endeavoring to injure our business for some time past and that we are not the only descent [*sic*] manufacturers of foods that are suffering in this way at the hands of the editors of this particular magazine. Since you are interested in the Jireh Foods, you may be more interested to learn why this particular magazine is so anxious to injure our reputation. The reason is very obvious if you will take into account the fact that this magazine is the official journal of the medical association of this country which is known as the backer of the medical trust. It is very clear to you, no doubt, that there are some physicians, particularly those that are associated with the magazine, who are anxious to stamp out of existance [*sic*] such concerns that offer a bona fide product, a meritorious product which actually produces the required results without the aid of medicine.
>
> "For the particular maladies for which we offer our foods, we have been very successful, consequently the antagonism on the part of this particular journal is the logical thing. In addition to this, however, and perhaps more important to us, is the fact that the editors of this magazine have made it known to us that they will not approve of our product until such time that

we care to be dominated by the moving influence of the magazine in question. They want us to supply them with the private formula which we use for manufacturing our foods and to enlighten them and show them the various processes applied to our products to produce the required results. As a bona fide and ethical business house, we absolutely and unqualifiedly refuse to comply with this wish, and will always refuse to do so, no matter how often they may attack us. We stand strictly upon principle in this matter and propose to run our business in our own way, and will not, under any circumstances, allow a magazine or anybody else dictate to us under what conditions we are allowed to do our business.

"The remarks which they make would perhaps hurt us some if they emanated from a source that was qualified to judge the merits of our food. The absurd side of the issue, and perhaps the comical side of it, is the fact that the honorable gentlemen who assume to condemn a product, know less about the disease for which the product is offered, and much less about diet and foods than the average layman. Consequently, we consider it simply absurd to allow them to step into our business and dictate policy to us. This is the gist [*sic*] of the discontent that prevails between the magazine editors and ourselves, and as long as we refuse to comply with their wish, we certainly cannot expect them to speak well of us. It has become a notorious fact in the medical profession that their criticisms are almost valueless, inasmuch as they stop at nothing in order to create sensationalism, and have attacked not only ourselves, but every bona fide manufacturer of foods and drugs in this country who has refused to fall in line with them.

"This explanation, we trust, will appeal to your good judgment and will convince you of what is said about us is untrue. Furthermore, our business has grown to colossal proportions, notwithstanding their endeavors to crush us. We call your attention to a most peculiar fact: that is, that they make no comment whatsoever as to the product and its therapeutic value in the treatment of diabetes. You notice they make an awful play on our literature, which was changed merely to suit conditions in business. We also wish to call your attention to another peculiar fact, and that is that a great majority of the physicians who are in with this magazine readily recommended our foods, and we also believe that your physician, after reading this letter, will feel the same way as most physicians do in relation to our foods. We believe that your physician is perfectly willing to be convinced that our foods are as represented to be, and the very best clinical evidence as this is the effect our foods have had upon you. Finally, if the foods are palatable and wholesome and have alleviated the annoying symptoms of Diabetes, then why should you be guided by the opinions of demagogues and yellow journalists?

"You may be pleased to learn that our foods have received the attention of Dr. Wiley, the well-known chemist and food scientist of this country, and we have now in our possession his reports showing the very high standard of our foods. This, in our opinion, is of more consequence than all the harangue which those venerable gentlemen of the magazine may indulge in.

"We want to convince you without an atom of doubt that we are honest and bona fide in everything we say, and we extend to you a hearty invitation to call at the first opportunity and shall be glad to tell you anything you may wish to know. Thus awaiting the pleasure of this visit, we beg to remain

"Yours very truly, JIREH DIABETIC FOOD CO."

We learn from this letter that THE JOURNAL'S "remarks" on the Jireh product are "libelous." We have made them many times and for several years past; if libelous, the manufacturer has excellent grounds for damages. We learn, too, that our remarks "are in no way pertinent enough to detract from the value" of the Jireh products. Why, then, take any notice of them? We learn, moreover, for the hundred-and-first time, that THE JOURNAL is the official organ of the "medical trust," and we are told that "there are some physicians" that are opposed to the Jireh Foods because these products cure diabetes without the use of medicine! THE JOURNAL, so the company says, wants the Jireh Diabetic Food Company to supply its "private formula" and to show the "various processes" by which the Jireh products are made. Such statements indicate that the Jireh Diabetic Food Company does not confine its mendacity to the mere advertising of its product, where the necessity for lying is naturally great.

The ambiguous remarks regarding Dr. Wiley are evidently intended to convey the idea that the doctor approves of the Jireh products. Dr. Wiley was sent a copy of the Jireh letter and his attention directed to the statements appearing therein regarding himself. He replied:

"In regard to the Jireh products and their claims that our reports show the very high standing of their foods, I would say that I consider such a claim entirely false. . . . We did examine five or six products in our own laboratory, however, and found them to be of very fair composition per se, but *not of a composition that afforded any legitimate basis for their claims. We entirely disapproved* . . . *three of the products making special claim as to their fitness for diabetics.* [Italics ours.—ED.] These were the Wheat Nuts, the Jireh Flour and the Patent Barley. Two of the other products were passed with a non-committal rating, which means that they are not actually disapproved, but the star marking is not accorded. These products were the dietetic Rusks and the Macaroni. For the latter especially no specific claims seem to be made. We called attention, however, to the generally objectionable juggling of terms indulged in by this company. . . ."

The Jireh concern says that in spite of the efforts of THE JOURNAL to "crush" it, "our business has grown to colossal proportions." Of this the New York physician who sends us the letter says: "Their 'colossal proportions' must have received a slight jar or they would not have taken time to write such a letter."

The following medical journals carry the advertisements of the dangerous and fraudulent Jireh products:

*Dietetic and Hygienic Gazette*
*Medical Times*
*Pediatrics*
*Medical Herald*

## DOWD'S PHOSPHATOMETER

Dowd's Phosphatometer, according to its inventor, is a device "for taking the phosphatic index or pulse of the nervous system." Its originator, J. Henry Dowd, M.D., Buffalo, N. Y., writes enthusiastically of his instrument:

> "Physicians who use the Phosphatometer are sending 50 per cent. less patients away for consultation, getting 75 per cent. better results at home, because the Phosphatometer tells the cause and what to do, and the Comp. Phosphorus Tonic gives results in 80 per cent. of all conditions of illness."

The "Comp. Phosphorus Tonic" referred to in the above quotation is a sideline of Dr. Dowd's, put out by the Richardson Company of Buffalo. The stationery of the Richardson Company gives its address as 334 Franklin Street, but directs that all communications be addressed to 40 North Pearl Street, which is the private address of J. Henry Dowd. According to the Buffalo directories, 334 Franklin Street is the drug store of Arthur E. Reimann.

To those who read the Dowd "literature," the Phosphatometer will appear to be either one of the wonders of the age or an unscientific absurdity. To the thinking man it will be the latter. It pretends to determine the amount of phosphates in the system. This is accomplished—alleged—by taking the second urine passed in the morning and mixing a portion of it in the instrument with a solution which is the well-known magnesia mixture. The height to which the crystals settle in ten minutes determines, according to Dowd, the amount of phosphates! Was ever a test devised that violated more of the first principles of quantitative chemical analysis? If so, we never heard of it. Dowd's system does not require any determination of the amount of urine passed in twenty-four hours or even of the amount passed at the second micturition in the morning.

If a patient whose urine was being "tested" by the Dowd method, should drink two cups of coffee for breakfast instead of one, his urine might be so dilute that the phosphates would fall below the "normal" mark. Dowd says that his Phosphatometer "takes the pulse of the nervous system." What about the patient who eats several eggs or consumes a sweetbread or other nuclein-containing articles of diet? The increased amount of phosphates in such a diet might easily lead to an apparent excess in the urine. Every physician, nay, every sophomore medical student, knows that the amount and kind of food ingested governs almost entirely the amount of phosphates excreted in the urine.

What actually does "Dowd's Phosphatometer," when used according to instructions, show? It shows the *presence* of phosphates in the urine; it permits a guess—with not the slightest claim to accuracy—as to the amount in the specimen tested; it gives no possible clue to the normal or abnormal relation of the phosphates in the urine or as to whether the source of the crystals precipitated is the nerve tissue or the food. Yet here are some of the claims made for it:

> "The Phosphatometer shows nervous metabolism the same as the ureometer shows muscular; the former errs in about 3 per cent.; the latter in 40 per cent."
>
> "The Phosphatometer shows the amount of nerve food being used and present in the nerve cells."
>
> "Over 50 per cent. of pain and human suffering is due to the nerves crying for food; the Phosphatometer will show the true cause in ten minutes."
>
> "The Index not only tells the present condition, but foretells the future, thus preventing serious complications which might arise."
>
> "The Phosphatometer measures the amount of phosphorus in the system."
>
> "The Dowd Phosphatometer not only takes blood-pressure, it tells how to regulate it."
>
> "The Phosphatometer measures the amount of phosphorus in the nerve cells; it is as positive in nerve troubles as the x-ray in fractures."

These claims are essentially false. As a matter of fact, a simple examination of the urine for phosphates cannot tell us the condition of the nervous system. This must be evident from the fact that only a portion of the phosphates is excreted in the urine, a very considerable part passing out with the feces. Further, the bulk of the phosphorus excreted comes from the food and only a small portion from the waste of the nervous system. The amount excreted by the urine which comes from torn-down nerve tissue is so small that it is practically impossible to estimate variations in it even by the most careful analytic methods.

In brief, Dowd's "scientific method" is nothing more than unscientific humbug.

### PULMONOL

#### Some Facts from the Inside

The letter that follows was received a few days ago:

"*To the Editor.*—I congratulate you on the article which appears in THE JOURNAL, Nov. 29, 1913, on Pulmonol.

"I have been fiscal agent for several companies, and some three years ago I was persuaded to take up the floating of Pulmonol. I did this after investigating and coming to the conclusion that the medicine was all that was claimed for it. I had not been in the business very long, however, before I found out that I had been deceived.

"The first case you mention, which was supposed to be so wonderful that the Committee on Tuberculosis was asked to investigate, was my first eye opener. Some time after this woman's death her daughter came to the office insisting and then *pleading* that the testimonial be discontinued, but Dr. Payne absolutely refused. Feeling how manifestly unfair it was to give the name of a dead person as a testimonial for the medicine was one of the reasons for my quarrel with the "medical director" and for my getting out of the concern.

"Some months after I left him, he continued to use this testimonial, advertising it considerably in and around New York. I drew the attention of the editor, whom I knew, of one of the newspapers in which the ad. was appearing, and he immediately discontinued it. Riker & Company, under whose name the advertisement appeared, also insisted that Dr. Payne omit this testimonial from his circulars in future.

"Pulmonol is being pushed very much in and around New York, and I think your article ought to be reprinted and spread broadcast and so help those poor people who have been deluded into believing that it really aids them in fighting the disease.

"I do not know whether or not your Journal is published for medical men alone. If not, I wish you would send me three copies, for which I will forward you forty-five cents on hearing from you. I would like to bring the article before Riker & Company, for I know this to be a reputable concern and I do not think they would longer stand behind and push a medicine like this after reading an article so convincing as yours of its fraudulent character.

"RANSON CAYGILL, 82-90 Beaver St., New York City."

The information contained in this letter is interesting and instructive, but that is not the reason we are publishing it. We are bringing it to the attention of our readers because it is typical of letters that come almost daily to this office from laymen who are interested in the work THE JOURNAL is doing in exposing medical frauds on the public. This phase of the propaganda work is encouraging and fruitful of good results. It is in the "ethical proprietary" field that come the greatest discouragements. The "proprietaries" sold to physicians, which THE JOURNAL is exposing, are in every case a disgrace to scientific medicine and in many cases, at least, just as fraudulent as the various "patent medicines." Yet physicians do not exhibit anything like the enthusiasm over exposures of this sort of thing that they and the public show in the case of "patent medicines." This attitude is an unworthy one. Sooner or later the knowledge that the public is gaining regarding "patent medicine" frauds will cause it to focus its attention on the proprietary evil as it affects the medical profession. When that time comes will it be shown that the physicians of the country have cleaned house? If not, the profession will suffer a loss of confidence on the part of the more intelligent portion of the public that will not easily be regained.

## Correspondence

### Method of Sterilizing Rubber Gloves

*To the Editor:*—The method of sterilizing rubber gloves by two tablets (weight not given) of mercuric cyanid in 4 ounces of alcohol and 4 ounces of talc (time not given) is acknowledged by Dr. Ray Ernest Smith (THE JOURNAL, Nov. 15, 1913, p. 1831) to be "theoretically" inefficient; but he says that the gloves "practically surely seem" to be sterile. There are no degrees of sterility of gloves; gloves are either sterile or not sterile and all gloves must be considered contaminated until they are sterile.

Mercuric cyanid is useless as a germicide, as may be seen by any one sufficiently interested to read Harrington's article (*Boston Med. and Surg. Jour.*, Jan. 14, 1904). He tested the cyanid in all strengths and mixtures and found that in a 1:500 solution it had no effect on the staphylococcus after thirty minutes. He concluded that in the strength recommended, 1:1,000, it did not destroy known pus organisms in three hours and that it was an inefficient germicide.

Dr. Smith asserts that hot water and soap followed by alcohol and cyanid are sufficient to sterilize gloves for obstetric work. He states that "some of our famous surgeons" use washing, followed by alcohol, to sterilize their hands. Schumberg (*Arch. f. klin. Chir.*, 1906, lxxix, 1) found that in most cases the hands showed more bacteria than before scrubbing, which he ascribed to the bringing of bacteria to the surface from the gland crypts, and that subsequent bichlorid scrubbing did no good. He found a fat solvent of benefit. Aperlo (*Clin. Chir.*, 1913, xxi, 331) concluded that continued washing with warm water and soap, using a sterile brush, was not sufficient to remove germs from the hands, and that the result was no better if the washing was continued for an hour. How, then, does Dr. Smith expect to rinse his gloves clean with hot water?

Alcohol is a poor germicide. Koch grew spores after 110 hours in alcohol. Goenner grew the streptococcus after fifteen minutes in alcohol, and Senger the *Staphylococcus aureus* after twenty minutes. An evidence of its weak action is the large percentage of alcohol required to preserve various proprietary liquid foods, in which it is used only as an antiseptic and not as a germicide. I have frequently recovered organisms from the previously infected hand after five minutes' immersion in alcohol, and Schumberg states that the reduction of the bacteria is only quantitative and not absolute.

All skin germicides should be fat solvents in order to penetrate the sweat-glands and hair-follicles. Organisms may reside within these and the entrance be blocked with fat, or they may exist within the fat itself. Alcohol is not a good fat solvent; it dissolves the fatty acid, but not the glycerid in which form the fat in the skin always exists. This is one reason why alcohol is not a good skin germicide. The concentration of alcohol is of no importance; it is too weak germicidally to matter whether it is 70 or 95 per cent.

I would repeat my advice that gloves should be boiled in water (fifteen minutes is sufficient) or glycerin or put in the steam sterilizer for thirty minutes at 120 C. (248 F.) with 15 pounds' pressure. The mercuric salts and alcohol are useless for the disinfection of rubber gloves.

Ellice McDonald, M.D., New York.

### The Truth About Ozone

*To the Editor:*—Hardly a month passes without some request coming to this laboratory concerning ozonizers and the uses of ozone for ventilating purposes. It was therefore encouraging to read the recent article of Drs. Jordan and Carlson (The Journal, Sept. 27, 1913, p. 1007) on the properties of ozone, as well as that of Sawyer, Beckwith and Skolfield (*ibid.*, p. 1013), concerning tests on ozone machines. These give the most definite data yet published on the subject. During the past year I have had several opportunities to see installations of these machines in a number of places. Invariably the odor of ozone could be detected only close to the machine. As the odor in very small quantities can be so readily noticed, this means that the gas was not being distributed far from its source. In some places good results were claimed for the machine. It has been my opinion that these results can be fully accounted for by the increased circulation of air in the room caused by the fan in the machine, as you have suggested in a recent editorial (The Journal, Sept. 27, 1913, p. 1045).

One instance of definite results may be of interest. An ozonizer was installed in a room in which it was necessary to exclude even small quantities of dust and dirt on account of the purpose to which the room was put. It was hoped that the ozone would relieve the usual stuffy condition. The irritating effects of the ozone were so great that the workmen refused to stay in the room unless the machine was removed.

It seems as if the positive results obtained by Jordan and Carlson and Sawyer were such that further data are unnecessary, and that we can finally give up the fallacy that ozone is of use in air purification.

John F. Norton, Laboratory of Sanitary Chemistry, Massachusetts Institute of Technology, Boston.

### Stethophone, Not Stethoscope

*To the Editor:*—Hippocrates employed immediate auscultation. Laënnec conceived the idea that mediate auscultation is practicable, and first used a roll of paper between his ear and the patient's chest. Later he constructed the monaural stethoscope, which is still the favorite instrument of many clinicians in Europe.

From the days of Laënnec (1816) up to the present, for the last ninety-seven years, the instrument has been called the stethoscope. The word is of Greek origin. It is compounded of *στῆθος*, breast, chest, and *σκοπέω* inspect, see. The word "stethophone" would be compounded of stethos and the suffix phone, which means sound or voice.

In the days preceding the ophthalmoscope, the auriscope, cystoscope, gastroscope, bronchoscope or the phoneidoscope, and in the days preceding the telephone, graphophone, dictaphone and microphone, the word stethoscope need not perhaps have been criticized; but in the present day I believe it is just as well that our classification be correct. It is clear then, that the name of instruments by the use of which we see, when the proper terminology is used, end in the suffix "scope," while the name of instruments by the use of which we hear, should end in the suffix "phone." In this connection, the phoneidoscope, an instrument to make visible the effect of sound, bears a very instructive name. We may find ourselves reluctant to give up an error which can soon celebrate its centennial, but if a stethophone it is, "why then miscall it?"

Joseph H. Barach, M.D., Pittsburgh, Pa.

## Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### DRESSING FOR LABORATORY TABLES

*To the Editor:*—Please publish the formula for the dressing for laboratory tables which makes them acid- and stain-proof. This formula appeared in The Journal some time ago but I am unable to locate it.

William H. Deaderick, M.D., Hot Springs, Ark.

Answer.—The formula for the ebonizing preparation said to render laboratory tables resistant to staining or corroding chemical reagents calls for two solutions as follows:

| | |
|---|---|
| Solution A: | |
| Copper sulphate and potassium chlorate, each | 125 gm. |
| Water | 1,000 gm. |
| Boil till salts are dissolved. | |
| Solution B: | |
| Anilin hydrochlorid | 150 gm. |
| Water | 1,000 gm. |
| or: | |
| Anilin | 120 gm. |
| Hydrochloric acid | 180 gm. |
| Water | 1,000 gm. |

Two coats of Solution A are applied while hot, the second as soon as the first has dried. Two coats of Solution B are applied and the wood allowed to dry thoroughly. Next a coat of raw linseed oil is rubbed in by means of a cloth to give a polish. In the treatment with the oil, the deep black color is partially brought out, but this does not uniformly appear until the table has been thoroughly washed with hot soapsuds. This latter treatment removes superfluous chemicals. To keep the table in condition it is said to be necessary only to wash off occasionally with soap and water and then to rub with oil. The cost of both solutions will not be over 50 cents. The amount is sufficient for ten square yards of surface.

### KOWARSKY BLOOD-TEST FOR DIABETES

In The Journal, Nov. 22, 1913, p. 1921, we published through error the Kowarsky test for sugar in the urine instead of the test for differential diagnosis of diabetes. The method of Kowarsky is a modification of that of Bertrand, the principle of which is the reduction of a copper solution by the sugar-containing liquid and solution of the cuprous oxid in an acid solution of ferrous sulphate which causes the separation of an equivalent amount of ferrous oxid, the quantity of which is determined by titration with potassium permanganate.

The technic is substantially as follows: Two flask-shaped tubes graduated with two marks indicating 0.5 and 1 c.c. contents are filled to the lower mark by means of a capillary pipet with a 2 per cent. sodium fluorid solution. Blood carefully drawn from the finger-tip is added to the upper mark, foam being removed by a drop of ether. The mixture is removed to a centrifuge tube with two marks, and the rinsings of the tube added up to the lower mark (5 c.c.). A little powdered sodium tartrate is dissolved in the liquid, 4 c.c. of a dilution of liquor ferri dialysati (1:1) are added. the tube corked, shaken and let stand for five minutes. It is then filled to the mark with liquor ferri dialysati, well shaken and centrifuged for from five to ten minutes. 2 c.c. of a solution containing copper sulphate, 0.8; pure glucose, 0.1, and water, 200, is mixed with 2 c.c. of one containing sodium tartrate, 40; sodium hydroxid, 30, and water, 200. in a small Erlenmeyer flask (of from 30 to 40 c.c. capacity) and exactly 5 c.c. of the clear liquid in the centrifuge added. The mixture is heated to boiling, boiled gently for three minutes and cooled by letting the flask stand in water five minutes. The mixture is filtered through a carefully tested asbestos filter by means of a filter pump. The residue is thoroughly washed, care being taken that the cuprous oxid remains on the superficial layer of the filter. The filter pump is detached, the cork bearing the filter is placed in the Erlenmeyer flask, and the cuprous oxid dissolved through the filter in 3 c.c. of the following solution: ferrous sulphate, 10; sulphuric acid, 40, and water, 200. The filter is washed until filtrate and washings equal not more than 10 or 12 c.c., which are then titrated with a 1:2,000 potassium permanganate solution until a distinct rose color remains.

The results are calculated in the following way: The number of cubic centimeters of permanganate solution used in the titration multiplied by 0.91 gives the amount of copper. The amount of sugar corresponding to the amount of copper is given in the accompanying table:

| Sugar | Copper | Sugar | Copper |
|---|---|---|---|
| 1.0 | 1.95 | 2.3 | 4.45 |
| 1.1 | 2.15 | 2.4 | 4.65 |
| 1.2 | 2.35 | 2.5 | 4.80 |
| 1.3 | 2.55 | 2.6 | 5.00 |
| 1.4 | 2.75 | 2.7 | 5.20 |
| 1.5 | 2.90 | 2.8 | 5.40 |
| 1.6 | 3.10 | 2.9 | 5.60 |
| 1.7 | 3.30 | 3.0 | 5.75 |
| 1.8 | 3.50 | 3.1 | 5.95 |
| 1.9 | 3.70 | 3.2 | 6.15 |
| 2.0 | 3.85 | 3.3 | 6.35 |
| 2.1 | 4.05 | 3.4 | 6.55 |
| 2.2 | 4.25 | 3.5 | 6.70 |

From this amount 1 mg. must be subtracted as being the amount already present in the solution used. The amount obtained by this subtraction corresponds to the amount present in 0.25 c.c. of blood, as only half of the amount of blood taken was used in the titration.

The whole process can be carried out in not more than thirty or forty minutes. Like every other quantitative method, it requires a certain amount of practice. Beginners should first learn to determine the amount of sugar in the solution used. (See *Deutsch. med. Wchnschr.*, Aug. 21, 1913, p. 1635.)

## COMPLEMENT-FIXATION TEST FOR GONORRHEA

*To the Editor:*—1. Is the complement-fixation test for gonorrhea supposed to disappear as a case of gonorrhea, or a complication, progresses toward recovery?

2. Kindly give me a few references covering this point.

O. J. MINK, M.D., Bremerton, Wash.

ANSWER.—1. According to the gonorrhea complement-fixation test, the antibodies can be present for at least two years after infection, but we find no record of a single positive reaction occurring after two years.

2. The following are references for the past two years:

Rockwood, H. L.: Complement-Fixation Test in Gonorrhea, *Cleveland Med. Jour.*, January, 1913; abstr., THE JOURNAL, March 1, 1913, p. 697.

Owen, R. C., and Snure, H.: Complement-Fixation Test in Diagnosis of Gonorrhea, *Jour. Michigan State Med. Soc.*, May, 1913; abstr., THE JOURNAL, May 24, 1913, p. 1666.

Value of the Complement-Fixation Test in Gonorrhea, THE JOURNAL, Queries and Minor Notes, March 23, 1912, p. 881.

Gonorrheal Complement-Fixation Reaction, THE JOURNAL, Society Proceedings, April 27, 1912, p. 1307.

McNeill, A.: Complement-Fixation Test for Gonorrhea, *Arch. Pediat.*, September, 1913.

Lespinasse, V. D., and Wolff, M.: Clinical Value of Gonorrhea Complement-Fixation Test, *Illinois Med. Jour.*, January, 1913.

O'Neil, R. F.: Results of Complement-Fixation Test for Gonorrhea at Massachusetts General Hospital, *Boston Med. and Surg. Jour.*, Oct. 3, 1912.

## URIC ACID TESTS—VALUE OF SODIUM CACODYLATE—PALATABLE ADMINISTRATION OF OLEORESINA ASPIDII—STRENGTH OF PHENOCO—VARIOUS PROPRIETARIES

*To the Editor:*—1. Is there any test other than a complicated quantitative analysis by which a physician can determine whether or not there is an excessive amount of uric acid in the urine?

2. Has Deschien's Syrup of Hemoglobin been accepted for the N. N. R.? Is it an ethical proprietary or a secret formula fraud?

3. What value has sodium cacodylate hypodermically? Is it of any value as a "tonic"—as a hematinic?

4. What is your opinion of Electrargol, Electraurol, Electroplatinol?

5. How can oleoresina aspidii be administered palatably to a child unable to swallow capsules?

6. I have been in the habit of storing tubes of catgut, glass catheters and rubber gloves, also of cooling instruments in phenol 5 per cent., or bichlorid 1:1,000. What strength of "phenoco" should be used for equal effect, or will it not take the place of the others?

M. D. L.

ANSWER.—1. The amount of uric acid can be determined in a convenient way, sufficiently accurate for most clinical purposes, by means of Ruhemann's method with an instrument known as the "uricometer," or by the "purinometer" introduced by Hall. These methods may sometimes be serviceable in practice. The technic is described in recent works on laboratory diagnosis. Usually it will be necessary to know the amount of purin nitrogen that is being ingested, or to place the patient on a purin-free diet before making the estimation.

2. We have no information regarding Deschien's Syrup of Hemoglobin. It is a proprietary product.

3. Sodium cacodylate has the effects of preparations of arsenic in general, and might be used in the same way as other arsenic compounds as a tonic and hematinic. (See N. N. R., 1913, p. 239.)

4. Electrargol, Electraurol and Electroplatinol are preparations of colloidal metals. The claims made for them appear to be very optimistic.

5. Oleoresina aspidii may be given in an emulsion made up with simple elixir and acacia in which from 5 to 10 minims are contained in 1 dram.

6. Phenoco is said to be about fifteen times as strong as pure phenol. Hence, if you use phenol in a 5 per cent. solution, a solution of phenoco 1:300 should give an equal effect.

## COMPOSITION AND USE OF GIEMSA STAIN

*To the Editor:*—Please give directions for making up the Giemsa stain, and its use.

E. S. HALL, M.D., McLeansboro, Ill.

ANSWER.—The formula of the Giemsa stain is as follows:

| | |
|---|---|
| *Azur II—eosin* | 3.0 gm. |
| *Azur II* | 0.8 gm. |
| Glycerin (C. P.) | 250.0 c.c. |
| Methyl alcohol (C. P.) | 250.0 c.c. |

Grind up the dyes in the alcohol and then add the glycerin.

Fix the films in methyl alcohol, and stain for five minutes in a mixture of 14 drops of the stain to 10 c.c. of distilled water. If necessary, a trace of sodium carbonate may be added to the water to intensify the basic stains. Wash in water, dry, and mount.

## GREEN PLANTS IN THE SICK-ROOM AT NIGHT

*To the Editor:*—1. Is it advisable to remove living green plants from the sick-room at night?

2. If so, why only at night?

R. M. C.

ANSWER.—1. As a rule, living plants will do no harm in a sick-room even at night. In some cases, however, they give off ethers which may have an unfavorable influence on sensitive persons. It is usually stated that they give off carbon dioxid at night, but the amount of carbon dioxid thus added to the air of a room is not likely to be a serious detriment.

2. No harm can be attributed to the ordinary, or daylight, metabolism of plants, which consists in decomposing carbon dioxid and giving off oxygen.

## TREATMENT FOR URTICARIA AND PRURITUS IN HYPERTHYROIDISM

*To the Editor:*—Please suggest treatment for urticaria and the attendant pruritus in a case of hyperthyroidism.

H. P. ASHE, M.D., Pittsburgh, Pa.

ANSWER.—Attention should be given chiefly to the underlying condition of the thyroid. The digestive organs should be kept in as good order as possible. Rest and quiet should be insisted on. Nervous sedatives might be tried. Calcium chlorid is recommended as a remedy in urticaria and would be worthy of a trial. Local alkaline baths or washes and the various antipruritic agents, such as 1 to 2 per cent. solutions or ointments of phenol (carbolic acid) or menthol, are appropriate.

## DISINFECTION BY FORMALDEHYD AND BY SULPHUR

*To the Editor:*—1. What is the best and most efficient method for disinfecting infected rooms for tuberculosis, typhoid and other contagious diseases?

2. Is burned sulphur a good disinfectant in a closed room?

S. P. HAND, M.D., Demopolis, Ala.

ANSWER.—1. Disinfection with vapors of formaldehyd is regarded as a most efficient method of disinfection at present.

2. Burning sulphur in a closed room in the proportion of 3 pounds of sulphur per thousand cubic feet is a fairly efficient method of disinfection, provided that the surfaces and material to be disinfected are thoroughly wet.

## TRAINING SCHOOL FOR MALE NURSES

*To the Editor:*—Please give the address of a training-school for male nurses. I have been a nurse for a number of years and wish a chance to perfect myself in my chosen work.

ARTHUR WILSON, Redland, Fla.

ANSWER.—So far as we can ascertain there is no school for general nursing in the United States to which men are admitted.

# Medical Education and State Boards of Registration

## COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

ARIZONA: Phoenix, January 3. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

COLORADO: State Capitol, Denver, January 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

ILLINOIS: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

INDIANA: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Gott, 56 State House, Indianapolis.

IOWA: The Capitol Bldg., Des Moines, January 6-8. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

MINNESOTA: State University, Minneapolis, January 6-9. Sec., Dr. Thos. S. McDavitt, 814 Lowry Bldg., St. Paul.

NEW HAMPSHIRE: State House, Concord, January 6-7. Regent, Mr. H. C. Morrison, State House, Concord.

NEW MEXICO: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

NORTH DAKOTA: Grand Forks, January 6. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

OREGON: Portland, January 6-8. Sec., Dr. L. H. Hamilton, Medical Bldg., *Portland.*

SOUTH DAKOTA: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

VERMONT: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

WISCONSIN: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

## Illinois September Report

Mr. Amos Sawyer, acting secretary of the Illinois State Board of Health, reports the written examination held at Chicago, September 24-26, 1913. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 136, of whom 87 passed and 45 failed. Three candidates did not complete the examination and one withdrew. The following colleges were represented:

PASSED

| College | Year Grad. | Total No. Examined |
|---|---|---|
| Georgetown University School of Medicine | (1913) | 1 |
| Bennett Medical College | (1912,3) (1913,8) | 11 |
| Chicago College of Medicine and Surg. | (1911) (1913,25) | 26 |
| Hahnemann Med. Coll. and Hosp., Chic. | (1912) (1913,2) | 3 |
| Hering Medical College | (1913) | 1 |
| Jenner Medical College | (1911) (1913,2) | 3 |
| Northwestern University | (1903) (1910) (1913,3) | 5 |
| Rush Medical College | (1902) (1912) (1913,8) | 10 |
| University of Illinois | (1912,2) (1913,13) | 15 |
| College of Physicians and Surgeons, Keokuk | (1877) | 1 |
| Drake University College of Medicine | (1913) | 1 |
| Tufts College Medical School | (1912) | 1 |
| American Medical College, St. Louis | (1913) | 1 |
| St. Louis University School of Medicine | (1913) | 1 |
| Washington University, St. Louis | (1913,2) | 2 |
| Medical College of Ohio | (1895) | 1 |
| Jefferson Medical College | (1912) | 1 |
| Meharry Medical College | (1911) | 1 |
| University of Texas | (1913) | 1 |
| Marquette University, Medical Dept. | (1913) | 1 |

FAILED

| College | Year Grad. | Total No. Examined |
|---|---|---|
| Bennett Medical College | (1912,2) (1913) | 3 |
| Chic. Coll. of Med. and Surg. | (1910) (1911,3) (1913,9) | 13 |
| Coll. of Med. and Surg., Physio-Med., Chicago | (1910) | 1 |
| Hahnemann Med. Coll. and Hosp., Chicago | (1911) (1912) | 2 |
| Hering Medical College | (1913) | 1 |
| Illinois Medical College | (1910) | 1 |
| Jenner Medical College | (1912,2) (1913,2) | 4 |
| National Med. University, Chicago | (1903) (1904) (1909) | 3 |
| Reliance Medical College, Chicago | (1911) | 1 |
| University of Illinois | (1913) | 1 |
| Hospital College of Medicine, Louisville | (1904) | 1 |
| University of Louisville | (1907) | 1 |
| American Medical College, St. Louis | (1913) | 1 |
| Barnes Medical College | (1899) (1905) (1906) (1910) | 4 |
| St. Louis College of Physicians and Surg. | (1908) (1910) | 2 |
| Medical College of State of South Carolina | (1902) | 1 |
| Meharry Med. Coll. | (1904) (1908) (1910) (1911) (1913) | 5 |

## New Jersey October Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 21-22, 191[illegible] The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 38, of whom 32 passed and 6 failed. Twenty-six candidates were licensed through reciprocity since July 29, 1913. The following colleges were represented:

PASSED

| College | Year Grad. | Per Cent. |
|---|---|---|
| Georgetown University | (1913) | 77.3 |
| Howard University | (1912) | 81.4 |
| University of Louisville | (1910) | 75.5 |
| University of Maryland | (1910) | 75.5 |
| Harvard Medical School | (1912) | 77.9 |
| Dartmouth Medical School | (1912) | 80.6 |
| Columbia Univ., College of Physicians and Surg. | (1911) | 77.5 |
| Fordham University, College of Medicine | (1911) | 77 |
| Long Island College Hospital | (1911) 83; (1913) 81.2 | 82.5 |
| New York Homeopathic Medical College and Hospital (1912) 75.1; 77.4; (1913) 75.5; 75.6; 84. | | |
| University and Bellevue Hospital Medical College (1913) 76.7; 79.5; 79.7; 81.8; 83. | | |
| Jefferson Medical College (1910) 88; (1912) 75; 81.9; (1913) 75; 76.3; 81.5. | | |
| University of Pennsylvania (1911) 81; (1912) 85; | (1913) | 75.9 |
| University College of Medicine, Richmond | (1912) | 76 |
| University of Virginia | (1913) | 83.7 |

FAILED

| College | Year Grad. | Per Cent. |
|---|---|---|
| College of Physicians and Surgeons, Baltimore | (1911) | 73 |
| New York Homeopathic Med. Coll. and Hospital | (1913) | 72 |
| University and Belleve Hospital Medical College | (1913) | 73.7, 73.7 |
| University of Naples | (1893) 57.7; (1895) | 68.9 |

LICENSED THROUGH RECIPROCITY

| *College* | Year Grad. | Reciprocity with |
|---|---|---|
| Howard University | (1905) | Dist. Colum. |
| University of Louisville, Medical Dept. | (1889) | Kentucky |
| Baltimore Medical College | (1901) | W. Virginia |
| College of Physicians and Surgeons, Baltimore | (1900) | Penna. |
| University of Maryland | (1911) | W. Virginia |
| Boston University, School of Medicine | (1883) | New York |
| Columbia University, College of P. and S. | (1898) | New York |
| Cornell University | (1910) New York; (1910) | New York |
| Eclectic Med. College of the City of New York | (1903) | New York |
| Long Island College Hospital | (1909) New York; (1912) | New York |
| New York Med. College and Hospital for Women | (1899) | New York |
| Hahnemann Medical College and Hospital, Philadelphia (1911) Pennsylvania; (1912) Pennsylvania. | | |
| Jefferson Medical College | (1907) | Penna. |
| Medico-Chirurgical College of Philadelphia | (1902) | Penna. |
| Woman's Medical College of Pennsylvania | (1902) | Indiana |
| *University of Pennsylvania* (1897 Pennsylvania; (1899) Pennsylvania; (1907) Pennsylvania; (1912) Pennsylvania; (1912) Pennsylvania. | | |
| University of Vermont | (1912) Vermont; (1912) | Vermont |
| Medical College of Virginia | (1909) | New York |

The following questions were asked:

ANATOMY

1. Name the valves of the heart; give location, structure and function of each. 2. Trace the superficial lymphatics of the upper extremity to their termination. 3. Internal saphenous vein: Give origin and termination, name its tributaries and veins it communicates with in its course. 4. Describe the knee joint, give blood and nerve supply and actions. 5. Describe the prostate gland and give its anatomical relations. 6. Give source and distribution of the nerves of the palm of the hand. 7. What important parts lie behind the sterno-clavicular joint? 8. Superior mesenteric artery: Give origin, course and parts supplied. Name its branches. 9. In amputation, three inches below the head of the fibula, what arteries are divided? 10. Describe the elbow joint.

PHYSIOLOGY

1. Name the cranial nerves that are exclusively motor. 2. State the functions of the sympathetic nervous system. 3. Name the structures involved in a knee jerk, and state the physiology of such a reflex action. 4. Describe a white blood cell. Where are they formed and what is their function? 5. Name the factors which produce the flow of blood in the veins. 6. Describe briefly the digestion of a meal consisting of bread and butter, beef steak and a cup of sweet chocolate. 7. Give the composition of normal urine. 8. Name the functions of the bile. Give its constituents. 9. What is ciliated epithelium? Where is it found and what is its function? 10. What constitutes the lymphatic system? What forces cause lymph to circulate?

CHEMISTRY

1. What is analytical chemistry, and what is the object of qualitative analysis? 2. Mention the general physical and chemical properties of urine. 3. State the general properties of organic compounds. 4. Describe the processes of fermentation and putrefaction. 5. Explain the terms, reaction and reagent. 6. Explain the process of respiration, from a chemical viewpoint. 7. What is ozone, and how does it differ from common oxygen; under what circumstances is ozone formed? 8. Illustrate by formula the difference between ferrous and ferric salts. 9. Enumerate the metals, salts of which are frequently employed in pharmacy. 10. State the laws of constant and reciprocal proportions.

HISTOLOGY—PATHOLOGY—BACTERIOLOGY

1. Name six fixing fluids. Give formula and uses. 2. Describe the preparation of permanent specimens. 3. Give life history of

blood-cells circulating in the blood-current. 4. Differentiate leukemia and pseudoleukemia. What characterizes a true leukemia? 5. Define edema. Name varieties and causes. 6. Describe abnormal heart sounds. Give causes and varieties. 7. What diseases or conditions cause respiratory disturbances? 8. Describe the colon bacilli group and diseases caused by them. 9. Describe yeast. 10. Name sources, varieties and effects of bacteria in milk.

### MATERIA MEDICA AND THERAPEUTICS

1. Podophyllum. Give official name, active principle, dose, properties and uses. 2. Glyceryl trinitrate. Give official name, dose, properties and uses. 3. Digitalis. Give official name, dose, properties and uses and preparations. Write a prescription containing digitalis for an adult. 4. Give official name, dose, properties and uses of three mercurial preparations. 5. Give official name of calcium chlorid. Dose, properties and uses. 6. Aspirin. Official name, dose, properties and uses. 7. Aconite. Official name, dose, properties and uses. Antidote for overdose. 8. Give etiology and treatment of rachitis. Write a prescription containing phosphorus for a child. 9. Describe the treatment of a case of sunstroke. 10. Ichthyol. Describe. Give dose, properties and uses. In what form would you apply it locally? Write a prescription for same.

### HOMEOPATHIC MATERIA MEDICA AND THERAPEUTICS

1. Differentiate nux moschata and asafetida in hysteria. 2. Differentiate three remedies in follicular tonsillitis. 3. Give treatment for carbuncle. 4. Give treatment for acute uremia. 5. Describe the cough of puls and drosera. 6. Differentiate eupatorium and gelsemium in grip. 7. Name three remedies having aggravation after sleep; after motion; in dampness. 8. Give indications for two remedies in enuresis. 9. Prescribe for: Constipation, with no desire for stool. Rectum seems sluggish; difficult to expel even a soft stool; stools hard, knotty and scanty. 10. Prescribe for: Headache increasing through the day; bursting pain; worse from sneezing or coughing; coated tongue; thirst; gastric derangement.

### PRACTICE (DIAGNOSIS) OF MEDICINE

1. Describe only the prodromal symptoms, giving duration of each, in (a) measles; (b) scarlet fever; (c) chicken-pox, and (d) small-pox. 2. Name five diseases in which the ophthalmoscope is an important aid to diagnosis, giving reasons therefor in each. 3. Define the terms "contagious," "endemical," "epidemical" and "pestilential," and name two diseases in each class. 4. Differentiate sunstroke, cerebral hemorrhage and alcoholic coma. 5. Describe four murmurs of the heart, giving name, cause, and state where each is best heard. 6. Name three causes for specific gravity of the urine (a) under 1010, and (b) over 1030. 7. Differentiate hepatic, intestinal and renal colic. 8. How much, what and how often would you feed a two-months' old bottle-fed infant? 9. Describe a typical case of acute lobar pneumonia in its different stages. 10. Define bronchial breathing. Where is it heard normally? What does it signify when heard elsewhere?

### SURGERY

1. Define hernia. 2. Give symptoms and treatment of ulcer of pylorus? 3. Give indications and technic of operation for ligation of common carotid artery. 4. Differential diagnosis between fracture of upper end of radius and posterior dislocation of ulna. 5. What is varicocele? How would you treat it? 6. Give causes of retention of urine. Give treatment for one cause. 7. Give differential diagnosis between abdominal ascites and a large ovarian cyst. 8. Give technic of paracentesis thoracis. 9. Give diagnosis and treatment of phlebitis. 10. Describe the operation for empyema.

### OBSTETRICS AND GYNECOLOGY

1. Give three causes for post-partum hemorrhage, and describe your procedure for its control in each case. 2. Give symptoms of threatened eclampsia; of actual eclampsia, and of death of the fetus. 3. What is ectopic gestation? Give its symptoms and its course. Differentiate it from ovarian tumor. 4. What is dry labor? How does it differ from normal? What are its dangers? 5. Given a woman in the eighth month of pregnancy, with uterine hemorrhage and increasing exhaustion. Describe your examination of the case; a condition you would find; your diagnosis, and your management of the case. 6. How would you diagnose left-occipito-anterior position; transverse position; breech presentation and face presentation? 7. What is asphyxia livida and asphyxia pallida? Give treatment. 8. Give causes, symptoms, appearance and dangers of cervical tears, and describe briefly the chief steps in an operation for their repair. 9. Describe and give uses or advantages of the following positions: Sims', Walcher's, knee-chest and lithotomy or dorsosacral. 10. Name three conditions which cause a vaginal discharge; give characteristics of each discharge, and give other symptoms which would differentiate the conditions.

### HYGIENE

1. Mention the various methods of house heating, and state which you consider the best for our temperate climate. 2. State a suitable temperature for a sick room. 3. In pneumonia, how would you ventilate the sick room, and at what temperature would you advise it to be kept? 4. Differentiate between a serum and a vaccine; define natural and artificial immunity how may the latter be produced. 5. For what conditions would you examine a child in order to determine the causes of inefficiency in school work? 6. What would be your method of procedure in rendering a malarial district healthful? 7. What prophylactic treatment would be necessary for those who were undertaking this work?

### JURISPRUDENCE

1. Name some of the violent causes of death. 2. How can you differentiate them? 3. What post-mortem findings would lead you to believe death to be due to $\text{H.NO}_3$? $\text{H9.CZ}_2$? [*Sic. Is this a catch question or a misprint? There were at least fifteen other typographic errors in the original copy.—Ed.*] 4. How would you determine whether a woman was pregnant or not? 5. How might such a question affect an individual from a legal standpoint?

# Book Notices

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**CLINICAL SURGICAL DIAGNOSIS FOR STUDENTS AND PRACTITIONERS.** By F. de Quervain, Professor of Surgery, University of Basle. Translated from the Fourth Edition by J. Snowman, M.D. Cloth. Price, $7 net. Pp. 779, with 514 illustrations. New York: William Wood & Co., 1913.

If this work were to be described by a single word, that word would be "practical," as the effort of the author throughout has been to present the subject of diagnosis in the most practical manner, eliminating much that perhaps is of scientific interest but as yet of little clinical value. One is constantly reminded that it is a living patient with whom the surgeon has to deal and that the chief aim of diagnosis is proper treatment. This is well illustrated by the following sentences from the discussion of intestinal obstruction: "There is no object in being able to proclaim at the autopsy that we had correctly diagnosed the situation and nature of the obstruction. Our main object must be to diagnose when surgical relief should be offered, although we may not always know the precise position and character of the obstruction."

After presenting the subject in detail the author has the happy faculty of epitomizing or drawing a short conclusion containing the pith of the matter which is easy to remember. For instance, with reference to injuries of the brain we find this: "The following conclusion may be drawn for the diagnosis of contusion of the brain. A patient who, immediately after an injury to the skull, manifests brain symptoms which persist for a whole day and which do not fit in with the signs of a gradually increasing cerebral pressure, has sustained a contusion of the brain in the widest sense of the term. This view is supported by the presence of irritative or localizing symptoms arising from cortical areas of ascertained function. It is definitely confirmed by a persistent rise of temperature which cannot be explained by infection from without."

The method pursued by the author in arriving at a diagnosis is to reason from the symptoms to a conclusion either on positive evidence or by exclusion, rather than to assume a definite condition and arrange the symptoms to fit the condition. While technical methods are not omitted, the author has "employed those methods of investigation which are available for the general practitioner, or at any rate, which can easily be carried out for him." The illustrations, which are numerous, are quite good and almost all of them are taken from the author's own cases.

**PROTEIN SPLIT PRODUCTS IN RELATION TO IMMUNITY AND DISEASE.** By Victor C. Vaughan, M.D., LL.D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M.D., A.B., Junior Attending Physician to Harper Hospital, Detroit, and J. Walter Vaughan, M.D., A.B., Junior Attending Surgeon to Harper Hospital, Detroit. Cloth. $3 net. Pp. 476, with illustrations. Philadelphia: Lea & Febiger, 1913.

This is a compilation and summation of the work which has been carried on for many years in Vaughan's laboratory at the University of Michigan. As is well known by those in touch with the progress in infection and immunity, this work began with a study of the composition and disintegration products of bacterial cells, which led to the finding of certain toxic and non-toxic products that were afterward learned to be obtainable also from proteins of all sorts. Out of this work, which incidentally yielded many items of value concerning bacterial chemistry, came also knowledge of changes which take place in foreign proteins within the animal body, whether these foreign proteins are bacterial cells, injected serums or food proteins. The ideas and results thus obtained preceded much of the modern investigation of protein sensitization and intoxication —that is, anaphylaxis or allergy. Vaughan is recognized as one of the pioneers in this most important line of progress, his work having been of particular value because it approached the subject from the chemical side at a time when practically all the investigation was solely by animal experiment. The conception of anaphylaxis as an intoxication with the products of protein disintegration, formed through the action of specific ferments developed as a biologic reaction to the foreign proteins and an integral part of the scheme of immunity to infection, was original with Vaughan, and has since been corroborated and developed at length by many other investigators, so that it is now the current theory of anaphylaxis. These American studies foreshadowed the work on "anaphylatoxins" and "protective ferments" in association with which the names of Friedberger and Abderhalden are especially conspicuous at present.

In addition to the work which has been done under the inspiration of the senior author, the book reviews much of the work of other investigators which bears on the subjects under discussion. There is also a presentation of the underlying principles and the conclusions which have been reached. While the authors are concerned primarily with presenting certain original work for consideration, the general air of fairness to other workers, and of seeking for the truth rather than insistence on unqualified acceptance of their own hypotheses, is noticeable and commendable. The collection and discussion of this large amount of material, which has heretofore been widely scattered in the literature, will be of great assistance to other investigators and to students of immunity in general. In the history of the early steps of our study of the important field of allergy this contribution will hold a prominent place. We would criticize but one thing—the title. "Protein Split Products" is an awkward but common translation of the German *Spaltungsprodukte*. It is not the split products of protein, nor yet protein split products—it is the products of protein-splitting, or better, cleavage, that we have under consideration.

Innere Sekretion. Ihre Physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Von Prof. Dr. Artur Biedl. Second Edition, Part II. Paper. Price, 28 marks. Pp. 692, with 75 illustrations. Berlin: Urban and Schwarzenberg, 1913.

This completes the second volume of the new and greatly enlarged second edition of this, the most exhaustive and authoritative of all the treatises of the glands of internal secretion. The general characteristics of the book have been sufficiently discussed in our reviews of the first edition and of the first volume of this edition. In the second volume are found the completion of the discussion of the adrenal, and the sections on the carotid and coccygeal glands, the hypophysis, the pineal gland and the internal secretions of the sexual glands, pancreas, alimentary canal and kidneys. As bearing eloquent testimony to the use the German readers expect to make of their books is the publication of a bibliography of 260 pages. It is scarcely necessary to say that even this imposing array of titles entirely fails to comprehend all the really valuable contributions that have been made to the subject of internal secretions, but it is by far the best compilation yet made, just as the book represents the best available source of information in this field. Because of the author's critical consideration of so much of the enormous literature, and especially because he speaks with the insight obtainable only by one who has himself made investigations of importance to the subject. this work is to be unqualifiedly recommended as the most reliable and useful work on the ductless glands and internal secretions that has yet been produced.

Mendel's Principles of Heredity. By W. Bateson, M.A., F.R.S., V.M.H., Director of the John Innes Horticultural Institution. Cloth. Price, $3.50 net. Pp. 413, with illustrations. New York: G. P. Putnam's Sons, 1913.

The author states that in writing this book it was his object to give a succinct account of discoveries in regard to heredity made by the application of Mendel's method of research. Among the biologic sciences, of which medicine is one, the study of heredity occupies a central position, and there can be no doubt that a perception of the truth in regard to the function of transmission will greatly contribute to the progress of medicine as well as to sociology and the industrial arts of the breeders of plants and animals. Bateson describes the original experiments of Mendel, defines "dominant," "segregation" and "allelomorphism," considers the consequences of segregation and the meaning of purity of type, and gives a list of sixty-one structural characters already proved to follow the rules of mendelian inheritance. To the complicated question of the heredity of color about a third of the book is devoted. The investigations on the more important problems of heredity and sex are sketched, and the scanty evidence as to mendelian inheritance in man considered. Of normal characteristics the dominance of eye pigment is about all that is certainly established. The complexity of the transmission of color characteristics is great. More is known of the transmission of disease and malformations which are in general dominant. A synopsis of the studies of Farabee, Drinkwater and Walker of brachydactyly is given in some detail. Color-blindness is considered among the sex-limited affections. In the discussion of human heredity it is stated that nothing in our present knowledge can be taken as a reason for regarding consanguineous marriages as improper or especially dangerous. Rules are given for the collection of evidence as to human descent. Intermediates between varieties and miscellaneous exceptions and uncomparable phenomena are considered in detail, and here as in other parts of the book the author criticizes "the law of ancestral heredity" of Galton, and the method of investigation pursued by Pearson and the English biometric school. The bearing of the mendelian discoveries on biologic science is sketched, and the nature of the unit characteristics, nature and moment of segregation, the relation of the chromosome to the unit factors, as asymmetry and variations and reversal of varations are discussed, as well as the bearing of the theory on evolution. The appendix contains a short biography of Gregor Mendel, with translations of his papers on hybridization and *Hieracium*.

Eye-Strain in Every-Day Practice. By Sydney Stephenson, M.B., C.M., D.O., Ophthalmic Surgeon to the Queen's Hospital for Children, London. Cloth. Price, $1.50 net. Pp. 139. New York: Paul B. Hoeber, 1913.

This is a collection of articles on eye-strain published by the author during the past ten years, the last one being the Middlemore postgraduate lecture delivered in Birmingham in December, 1910. Mr. Stephenson well represents the newer ophthalmology. He is one of those who study the patient as well as the eye, and whose interest is not entirely absorbed by pathology and surgery. With reference to eye-strain as the cause of all our ills, he takes a wise middle ground, criticizing both the extreme enthusiasts and the unbelievers. He quotes many cases from his large experience which aptly illustrate the common and the uncommon effects on comfort and health of uncorrected and imperfectly corrected errors of refraction. He emphasizes repeatedly the importance of complete cycloplegia in the study of these cases, and puts no age limit on the use of cycloplegics. He calls attention again and again to the often overlooked fact that perfect vision is not at all inconsistent with eye-strain, and that it is the small and easily concealed error that often causes the most persistent and annoying headache, nausea, vertigo or other symptom. It would be well if every practitioner, and especially every neurologist, would read and ponder these essays. The references to the literature on the subject are worth the price of the book to any one interested. The references to the work done in America, beginning with the classical papers of Dr. Weir Mitchell, are especially gratifying.

Gout. Its Etiology, Pathology and Treatment. By James Lindsay, M.D., M.R.C.P. Cloth. Price, $1.50. Pp. 212. New York: Oxford University Press, 1913.

This is a well-written, concise statement of facts and theories pertaining to gout. The author has analyzed statistics in an interesting way. The chemistry of gout is discussed, but nothing is contributed to our knowledge of the subject. The brief chapter on the bacteriology of gout is interesting, as it briefly outlines the various theories which have been published assigning to bacteria a causal relationship to the disease. These theories, however, are not sufficiently substantiated by facts. The clinical description of typical gout is excellent and is accompanied by pictures of joints, ears, eyelids and finger-nails which are extremely good. Roentgenograms are also reproduced and help the reader to understand the pathology of the disease; but this part of the book is open to criticism because atypical gout is too briefly and imperfectly described. There is nothing new in the treatment outlined by the author. What he advises is conservative and praiseworthy.

# Miscellany

## The Diary of a Dublin Medical Student (1831-1837)

In the *Dublin Journal of Medical Science* for November, 1913, p. 360, Dr. T. Percy C. Kirkpatrick, registrar of the Royal College of Physicians of Ireland, prints the diary of Robert Thompson, M.D. (Glasgow, 1838), during his student period at Steevens' Hospital and the School of the Royal College of Surgeons in Dublin (1831-1837). Thompson, after graduation, commenced practice in Johnstown County, Kilkenny, where he worked with conspicuous success as surgeon and obstetrician until his death, April 8, 1875. Having been apprenticed to Abraham Colles in October, 1831, with what he calls "a pretty fair, though not well-grounded, education," he began to attend lectures while in residence at Steevens' Hospital, "where a number of wild fellows messed in our room, generally spent our evenings sparring and drinking punch and going to the upper gallery at the theater." Cholera appearing in Dublin in April, 1832, he was attacked with "nostalgia and other nervous symptoms, which disappeared immediately upon my reaching home on Easter Sunday, 1832." Returning to Steevens in October, he began to work hard at dissecting but was soon laid up with small-pox caught from a subject. In 1833-1834 his chum was William Colles, son of the famous surgeon, with whom he "spent a jolly winter, drank a deal of punch, went to the theater at least twice a week, passed the second examination May, '34." Most of his time through his whole student's career was taken up with a pleasant combination of conviviality, outdoor life and hospital work, diversified by other Irish experiences, of which we may give a few citations:

Nov. 15, '33: I am on duty to-day, and had a good deal to do in the way of dressing fractures; took in an old man with a broken humerus. At present there are only six resident pupils in the house besides Tuthill.

July, 1834: Read some Béclard's "General Anatomy." . . . Have paid nurse in advance until Dec. 9, 1834. [The nurse in those days usually looked after the resident students' rooms and laundering for a consideration.] Read very hard for two months for the third class examination, which I passed on November 15.

May 22, 1835: I have been examined to-day by Hart on the physiology of the nerves, next on the anatomy of the prostate and prostate glands, of which I missed not a word; then on the blood tumour of the scalp. Adams on Medical Jurisprudence.

March 1, 1835: Got a green frock coat from Walker.

May 24, '35: Have been made an Orangeman to-day; fee 7s. 6d.; paid Bryan 1s. 6d. for washing; sundries 3s. 6d.

June 2, '35: Paid Benson £2 2s. for dissection; dined at Finish, 2s. 2d.

June 11, Monday: I am completely stuck for money; have not written home.

June 26: Slept badly; bought 5 pounds of tea; Mun and I dined at the Northern; borrowed £1 from John Hely.

July 3: Went with crew of six to sea; the swell was too heavy at the lighthouse; did not go past it; had a great lunch and heavy drink on the wall.

Tuesday, July 30: John Hely called here to-day; dined with him at the hospital; saw a contused and lacerated wound of the ankle from the ball of the great toe to the inner side of the os calcis, which was rough, and the tendon almost divided, the posttibeal nerve quite bare, and the artery could be seen pulsating; the posttibeal tendon was bared. Mr. Harrison put in three points of suture, one anterior, one under the malleolus and another posterior to it; the wound dressed with lint dipped in blood; there were globules of synovia in the blood.

August 2: Went with Mun to Marradyke after plover.

Sunday, 10: Walked to Templetuohy Church; beat the car there and back; while coming home fell into a ditch.

Wednesday, 13: Commenced to write a translation of Lucian. . . . Went to Ballyknockan in the evening; fell off the mare.

Saturday, 16: Went in the car to church; poulticed my leg; continued poultice; reading Lucian.

October 29, '35: Tom Neville is dead; got a pair of Trews; Henry is gone to Kilkenny; my hand very sore where the cow bit me in endeavoring to extract a potato from her throat.

Dec. 5, '35: Bought a hat, £1 3s.; paid Evans 2s.; paid O'Keife for putting down my name for lectures £4 4s.; received from Henry to pay gun 15s.; ordered a coat from Gately, £3 10 s.; paid Maunsell 5; boots vamped, 12s. 6d.; attended my first midwifery case.

Monday, Dec. 14, '35: Visited the Meath Hospital; went round with Graves; will attend there; was called up four times last night.

December 22: The weather is very cold; thermometer in my room 8 below zero; had a case in Trinity place; retained placenta; got Maunsell to extract it.

Dec. 25, X Mass: The woman in Trinity Place is very well, but the pulse is 130; no pain in the hypogastrium, but a very slight tenderness; no fever.

Jan. 12, '36: We have established a mess; got a receipt from the butcher for £3 11s. 6d.

February 10: Received a cheque for £5 to pay for tea.

February 15: Had a breech presentation in Mary Street.

March 22: Saw Cusack tie the carotid for aneurism.

April 8: The statue of King William blown up.

April 25: Painting the boat.

April 26: Saw a flap operation of forearm.

April 27: Got my certificate, M. Medica, M. Jurisprudence, Surgery.

May 8: Moore and Hunter (who are both dead since, one in Limerick and the other at Madras) returned from Glasgow; we all, with Gelstone, supped at O'Hara's, on leaving which place we got up a row with two watchmen, who were well beat; they got away, however, and brought back twelve others, who soon turned the tables; Somerville was knocked down and eight of us arrested and fined 30s. each. Lent J. Hely £1; he and Chas. came here to-day.

May 19: Returned Gerald Osbrey's pistoll and thermometer.

May 24: Had a breach case to-day.

June 4: Reading Cooper on the testicle; wrote home.

June 17. Grind on exostoses, a desease [*sic*] of which I know very little.

June 26: Dined in a cabin, consumed a deal of mountain dew.

June 28: Dissecting.

June 29: Dissecting.

July 26: Dined at Steevens' with W. Colles.

August 8: At a case of twins with Maunsell for nineteen hours.

October 12: I am 20 to-day; dined at O'Hara's in the evening; at Bull's got into a fight; Brown and I well beat by six or seven fellows; J. Hely lodged a pound for him and me; in the morning went to College Street; no prosecution.

Jan. 17, '37: Have put in my first day's examination taken by Palmer on the testicle hernia, by Hart on General anatomy of, by Harrison on fauces, Tongue.

January 23: Passed the College; examined by Rumly on fever, by Mr. Colles on inflammation of bladder, naevi; answered well.

January 24: Hair cut; went to the Protestant meeting.

January 27: Received from my father £10.

January 31: Became very ill this morning with sore throat and fever.

February 1: Sent for Colles; confined to bed for a week with influenza.

January 13: Had my certificate of residence signed by Cusack, Wilmot.

June 22: I must go to Dublin for my diploma.

Although he became a licentiate of the Royal College of Ireland, in 1837, Thompson did not graduate at Dublin, but took his degree at Glasgow a year later. In spite of his fondness for skylarking and conviviality, he seems to have been a good student and a successful practitioner. On the whole a graphic, if sketchy, presentation of a medical student's life in the late thirties, the palmy days of Colles, Stokes, Adams and the other leading lights of the Dublin school.

**Defective Schoolchildren.**—The medical examination of schoolchildren in New York, which became compulsory under the law in 1913, was begun in 1907 as volunteer work by the State Department of Health. During the first years of this work the statistics were not considered reliable, but during the past year the work has been so extended and systematized that the results, while lacking in some details, are still worthy of consideration. The total registration in the public schools of the state last year, exclusive of the cities, was 415,930. Of this number 30 per cent. were examined for physical defects by the teacher. The exact number reported as having some defect of sight, hearing, nasal respiration or the teeth has not been carefully determined, but will be about 30 per cent. The total number of defective children found in the 124,526 examined was 81,867, being 65.6 per cent. The highest percentage of defects was shown in the teeth, 29.7 per cent. having defective teeth. This percentage is thought to be much too low, as Buffalo schools showed a percentage of 46.7 per cent., and in the New York City schools an examination of the reports of 23,000 children in fifteen schools shows a percentage of about 50 having defective teeth. Next to teeth the largest number of defects was found in distant vision, 25.8 per cent. The percentage of defects, except those of the eyes, decreased with advancing age. In the departmental reports there was no decrease in those having colds or suffering from catarrh, 14.6 per cent. being subject to frequent colds. There were 13,195 reported as being mouth-breathers, and 34,020, or 27.9 per cent., as having defective teeth, and 2.5 per cent. as not being up to the standard of health of the other children or as being truants. In New York City about 14 per cent. were found to be mouth-breathers. This tabulation shows that distant vision decreases about 9 per cent. between 7 and 16 years of age; discharging ears 29 per cent. There was also a decrease of 28 per cent. in frequent earaches between the ages of 13 and 16, and 32 per cent. in deafness between the same ages. There was an increase between the ages of 7 and 16 of 13 per cent. having inflamed eyes or squinting; of 41 per cent. in headaches; 35 per cent. in those having frequent colds, and 92 per cent. in those wearing glasses. There was an increase of 25 per cent. between 13 and 16 years of age in the focusing power; 24 per cent. in the mouth-breathers, and 32 per cent. of those having defective teeth. Backward children increased 62 per cent. between 7 and 13 years of age, and those having defective hearing 16 per cent. The defects noted in the New York reports are about the same as those of Massachusetts.

**Advent of the Socialized Man of Service.**—The commercialized man only is passing; the socialized man of service is arriving. The eyes of the world have been focused on commercial conquest without considering the man-portion of the problem. We are entering on a forward movement of humanity when man will count for more than dollars; the age of the child, home and sanitation; an age when a captain of preventive disease and crime will be hailed with equal acclaim as a captain of industry. . . . The Chicago Woman's Club, parental schools, home and truancy movements, boy scout movement, juvenile courts are skirmish lines behind which the social forces of the nation are aligning. Prevention of disease and crime is the shibboleth of the race-betterment workers. The workers in this field are determined that the needs of the home, school and sanitation shall be brought up abreast with commercial and industrial activities; that America shall no longer be the home of preventable diseases and preventable crime; that this republic, as originally designed, shall be the home of the child, the mother, the toiler in every productive and constructive field of labor.—D. E. McClure, *Bull. Mich. State Board Health.*

**Infusion Method of Treating Varicose Veins.**—B. Schiassi of Bologna, Italy, has recently issued a pamphlet, profusely illustrated, showing the details of his method of flushing the vein with an aqueous solution of iodin. The principle is not new, but the substances used for the purpose hitherto have had more or less of a caustic action, and this, he declares, is wrong. The fluid he uses merely stimulates the inner lining of the vein to proliferate; this obstructs the lumen, and the tendency to varicose enlargement is thus arrested. He severs the vein through an incision about 6 cm. long, below the knee and again in the upper third of the thigh, or else at the ankle, according to the location of the principal trouble. He then injects the fluid into the vein from the upper stump in the lower incision, and the fluid pours out of the distal stump in the upper incision. He makes the infusion through a glass tube 2 or 3 mm. in diameter, with an olive tip with a single large window; this end is worked into the vein; the other end is connected with the syringe by a rubber tube. The fluid is a mixture of 1 gm. metallic iodin, 1.1 gm. potassium iodid and 100 gm. distilled water. The method has been applied in hundreds of cases with invariably satisfactory results, he states, and adds that embolism is impossible with this technic. The solution prevents instead of favoring coagulation, and the stumps not utilized are ligated. We will loan the pamphlet on request accompanied by three 2-cent stamps.

# Medicolegal

### Liability of Company Contracting to Furnish Employees with Physician

*(Neil vs. Flynn Lumber Co. (W. Va.), 77 S. E. R. 324)*

The Supreme Court of Appeals of West Virginia holds that when an incorporated lumber company agrees with an employee, in consideration of monthly deductions therefor from his wages, to furnish a competent and skilled physician to attend and treat him for any sickness or accident occurring while in its service, it is bound thereby to select and retain for that purpose a physician having the knowledge and skill ordinarily possessed by other members of his profession in the same community.

Should the company fail to perform the duty so imposed, and by reason thereof the employee be injured, it will be liable in damages to him, to the same extent as the physician himself would be were he sued for the injury. In such a case, the injured employee may maintain against his employer either what is termed an action in assumpsit on the contract, or trespass on the case for the tort.

The contract stated is not ultra vires, or beyond the corporate powers of the company to make.

It is true that the relation of master and servant, principal and agent, has no application as between a corporation and a surgeon employed by it to render professional services to its sick or injured employees, and that the doctrine of respondeat superior, or let the superior answer, has no application. But this rule is subject to the important proviso that there is a liability on the employer to the servant unless in pursuance of its undertaking it exercises reasonable care in selecting one having the knowledge and skill ordinarily possessed by other members of his profession in the same community.

### Damages for Alleged Malpractice in Treatment of Shoulder

*(Stanford vs. Hyde (Conn.), 87 Atl. R. 738)*

The Supreme Court of Errors of Connecticut, in affirming a judgment in the plaintiff's favor for $2,000 damages for alleged malpractice, says that in the conflict of the testimony the jury might reasonably have found that a fall from the ladder was the cause of some injury to the plaintiff, and that if the shoulder was thereby dislocated the defendant ought in the exercise of reasonable care to have discovered it. The most serious issue of fact in the case was whether or not one of the injuries suffered by the fall was a dislocation of the shoulder. There was evidence before the jury from which the existence or non-existence of this fact might have been found. The court cannot hold that the jury in finding its existence acted so unreasonably as to warrant the setting aside of the verdict. Nor can the court hold that the damages assessed by the jury were so excessive that the verdict ought for that reason to be set aside, when the special damages might have been found to be $478 and the injury to have resulted in an appreciably permanent impairment of the shoulder affecting the plaintiff's pursuit of his trade.

### Must Have and Exercise Skill

*(Hinkle vs. Smith (Ga.), 77 S. E. R. 650)*

The Court of Appeals of Georgia, in affirming a judgment for the plaintiff, says that the evidence was conflicting, but the evidence for the plaintiff supported her contention that she sustained damage by reason of the unskilful manner in which her dislocated shoulder was reset by the defendant, although a finding would have been authorized that the shoulder was properly set, and the plaintiff's injury was the result of a redislocation, brought about from causes over which the defendant had no control. The evidence authorized a finding that the plaintiff had been damaged by reason of unskilful surgical treatment by the defendant.

Even if the instructions of the court to the jury which were complained of could be construed as submitting to the jury the issue as to whether the defendant possessed reasonble surgical skill, they were not erroneous. The jury being authorized to find that the defendant failed to exercise a reasonable degree of care and skill, it was wholly immaterial whether the injury to the plaintiff resulted because the defendant did not possess reasonable skill as a surgeon, or whether, having such skill, he failed to exercise reasonable care in the treatment of the plaintiff.

One undertaking to practice medicine or surgery must bring to the exercise of his profession a reasonable degree of care and skill. If, in performing an operation, a surgeon fails to exercise such a degree of care or skill, he will be liable for any damage which may ensue, without reference to whether he did not possess the requisite amount of skill or whether he negligently failed to exercise skill which he did possess.

### Medical Services Not a Consideration for a Release

*(Kennedy vs. Spokane, Portland & Seattle Railway Co. (Wash.), 132 Pac. R. 50)*

The Supreme Court of Washington says that the plaintiff was injured while in the employ of the defendant. Subsequently he went to the company's offices and there saw the claim agent, also the company's head physician, and was presented by the claim agent with a written release of damages with the request that he sign the release, which he did. This release recited that, in consideration of medical and surgical attention furnished to him by the company, he released it from all liability, etc. The first question to be determined was: Did the medical services furnished by the company's physician to the plaintiff constitute a consideration for the release? If the rendition of these services by the physician and the acceptance of them by the plaintiff did not create the relation of debtor and creditor between them, then the services would not be a consideration for the release. In other words, if they were rendered under such circumstances that a recovery could not have been had for them in an action against the plaintiff, then they would be insufficient as a consideration. It was not contended that the evidence failed to make out a prima facie case of negligence on the part of the company which caused the original injury. When negligence is once established, the person or corporation being guilty thereof becomes liable for the expenses incurred for medical attention and physician's services. And, on the hypothesis that there was negligence which produced the original injury, the services of a physician, being an element of legal liability, would not be a consideration for the release of damages.

### Testimony as to Roentgen-Ray Pictures Without Their Production—Not Best Evidence

*(Marion vs. B. G. Coon Construction Co. (N. Y.), 141 N. Y. Supp. 647)*

The Supreme Court of New York, Appellate Division, Third Department, says that in this personal injury case one of the plaintiff's witnesses, a physician, after testifying that he was present when certain Roentgen-ray pictures were taken, saw them taken, saw them developed, and looked at the plates immediately after they were developed, proceeded to tell what the pictures showed. Another physician also told what he thought the plates showed. There was no demand made by the defendant for the production of the plates; no hint or suggestion that they were desired. They were in fact in court, so the plaintiff stated in his brief. The court can see no error at all in this Roentgen-ray incident. The evidence showed that nobody but a Roentgen-ray expert could tell anything from the plates, and that if they had been produced they would have done the court, jury, or the defendant's ordinary physicians no good.

The court does not think that the doctrine that an ordinary photograph is the best evidence of what it contains should be applied to Roentgen-ray pictures. They constitute an exception to the rule concerning ordinary documents and photographs, for the Roentgen-ray pictures are not, in fact, the best evidence to laymen of what they contain. Generally they are no evidence at all, signifying nothing whatever, except to the expert. The opinion of the expert is the best evidence of what they contain—the only evidence.

If there had been a demand for these pictures in court, or a request that they be submitted to the inspection of the opposing experts, and these rights had been denied the defendant, such an error would be serious. But whatever harm befell the defendant, if there was any harm at all, came to it by reason of its own failure to demand what it was entitled to, and what it would unquestionably have received by the mere asking. To sustain this contention of the defendant would be to tolerate worse than a technicality—a trick.

### Sufficiency of Complaint in Action for Malpractice—When Barred

*(Finch vs. Bursheim (Minn.), 142 N. W. R. 143)*

The Supreme Court of Minnesota affirms an order overruling a demurrer to the complaint in this action for alleged malpractice in the treatment of a dislocated hip joint. The court holds that the allegation that the defendant "negligently and unskilfully" treated the injury after undertaking the case was clearly sufficient as against a demurrer. Perhaps a motion to make the complaint more definite and certain might have been sustained, but it was not open to serious question that the complaint stated a cause of action.

The court also holds that an action against a physician and surgeon to recover damages due to negligent and unskilful treatment of the plaintiff is based on a breach of his contract to treat the plaintiff with ordinary professional skill and care, and is an action on contract. It is therefore not barred by the provision of the Minnesota statute of limitations which provides that actions for libel, slander, assault, battery, false imprisonment, or other tort resulting in personal injury shall be commenced within two years. The six-year limitation applicable to actions on contracts applies.

### Proof in Action for Services in Another State

*(Corcia vs. Giuliano et al. (N. J.), 87 Atl. R., 94)*

The Court of Errors and Appeals of New Jersey affirms a judgment of the Supreme Court affirming a judgment for the plaintiff, a physician, obtained in the district court of East Orange, N. J., against the defendants, who were husband and wife, for medical services rendered their daughter in the city of New York. The court holds that a motion for a nonsuit was properly denied, which asked for the nonsuit on the grounds: (1) that the plaintiff had not introduced in evidence his license as a physician and surgeon in the city of New York; (2) that the plaintiff had not deposited with the clerk of Essex County a copy of any diploma of a legally chartered medical college or university in good standing, or some medical society having power by law to grant diplomas.

### Power of Boards of Health to Regulate Removal of Dead Animals

*(Schwarz Bros. Co. vs. Board of Health of Jersey City (N. J.), 87 Atl. R. 463)*

The Court of Errors and Appeals of New Jersey holds that a municipality may lawfully make reasonable regulations prescribing the time within which the dead animals may be removed or disposed of and the manner of such disposition. The sole justification for the exercise of this power is the conservation of the public health. An ordinance passed by the board of health prescribing such regulations is valid so far as it relates to dead animals which are a nuisance or offensive or likely to be dangerous to the public health; but there does not seem to be any sound or valid basis for a provision in the ordinance which requires the owner to obtain a special permit before the removal of the carcass, where the dead animal is not a nuisance and not offensive or dangerous to the public health by reason of the disease or diseases of which it died or for any other reason, and therefore in that respect and to that extent the ordinance is unreasonable. Moreover, the court deems beyond the powers of the board a provision in such an ordinance which delegates to the health officer the power to determine when and under what conditions a permit shall be granted to the owner of a dead animal for its removal. That is a delegation of power which should be exercised by the board of health itself.

# *Society Proceedings*

## COMING MEETINGS

Amer. Association of Anatomists, Philadelphia, Dec. 30-Jan. 1, 1914.
American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Western Surgical Association, St. Louis, Dec. 19-20.

## SOUTHERN MEDICAL ASSOCIATION

*Seventh Annual Meeting held at Lexington, Nov. 17-19, 1913*

The President, Dr. Frank A, Jones, Memphis, Tenn., in the Chair

### Cerebrospinal Meningitis with Special Reference to Certain Signs or Measures

Dr. Randolph Lyons, New Orleans: The relative importance of Brudzinski's signs in adults has not been determined carefully. From the point of view of early diagnosis the eight measures fall into the following order of importance: Lumbar puncture established the diagnosis in 95 per cent. of the twenty-one cases which I analyzed. Rigidity of the neck could be demonstrated in twenty cases on first examination, or 95 per cent. Kernig's sign was present on first examination in 90 per cent. of the cases and at some time during the disease in 100 per cent. The "neck sign" falls into fourth place. Brudzinski's statement with regard to the relatively greater value of his "neck sign" over Kernig's sign in children does not hold good for adults. It was found positive on first examination in 76 per cent. of the cases and could be elicited at some time during the course of the affection in 90.4 per cent. Brudzinski's contralateral (identical) reflex was present on first examination in only 33.3 per cent. of the cases. It was positive at some time during the disease in 50 per cent. of the cases. Babinski's sign occurred in but three cases, or 11.6 per cent., at some time during the disease. In two of the cases it was positive on admission. Macewen's sign was found to be of practically no value in this series. It could be demonstrated in but one instance. This patient was the only child (5 years) in the group. The presence or absence of the patellar reflex was found to be of no apparent diagnostic importance.

### Meningococcus Carriers

Dr. William Litterer, Nashville, Tenn.: The viability of the meningococcus isolated from carriers varies greatly in different epidemics. The variability in the resistance is not a reliable index as to the degree of toxicity of the microorganism. The meningococcus appears to be of so short vitality and so fragile an organism outside of its natural habitat (the human body) as to lead to the inference that direct transmission is probably the only means of conveying the disease. The great majority of healthy persons who harbor the organism can resist the infection. Only 2 per cent. of the carriers in our series developed the disease. The spray cannot reach all the deep recesses of the upper air-passages; nevertheless it is indicated in all carriers, for the reason that it either destroys or mechanically cleanses out all cocci with which it comes in direct contact, thereby lessening reinfection, and at the same time reducing droplet infection to the minimum. There is apparently no means at our command in which the "persistent carrier" can with any degree of regularity be rendered free from the carrier state. In institutional epidemics the wisest procedure is a prompt isolation of all patients, the search for carriers and their detention, together with the general use of the spray.

### The Intrameningeal Treatment of Tabes Dorsalis and Cerebrospinal Syphilis

Dr. Thomas R. Boggs and Dr. R. R. Snowden, Baltimore: We treated by the intraspinal injection of serum removed one hour after the intravenous injection of salvarsan or neosalvarsan. The Swift and Ellis technic was followed, except that we injected larger doses of the undiluted serum. Blood was withdrawn one hour after the intravenous administration of salvarsan and allowed to clot. The next day the serum was removed, centrifugalized and heated at 56 C. (132.8 F.) for half an hour. Lumbar puncture was then done, cerebrospinal fluid withdrawn and exactly enough serum injected to replace the fluid. The amounts varied between 20 and 35 c.c., and the treatment was repeated from every ten to twenty days until the spinal fluid was normal in respect to the cell-count and Wassermann. In every case there was marked improvement, the cell-count dropping to normal and the Wassermann becoming less marked and in most of the cases entirely negative. The most constant result was the disappearance of the lightning pains and other sensory disturbances, and this resulted in a more cheerful mental attitude and a corresponding improvement in the appetite and nutrition. The effect on locomotion was slower in development and less marked, but definite, and in some cases great improvement was achieved, rather more pronounced, apparently, than in patients treated by smaller doses of diluted serum.

#### DISCUSSION

Dr. R. H. von Esdorf, Mobile, Ala.: The best thing to do is to isolate the patients as early as possible and surround them with the best conditions that can be had, which in many cases is not feasible at the homes of the patients. If a small hospital could be established and the patients isolated, it would lower the mortality from this disease materially.

Dr. Lillian H. South, Bowling Green, Ky.: For one case in which a diagnosis of meningitis was made from a swab of cotton sent in a sterilized container to the laboratory there developed one hundred cases in one town, with thirty-five deaths. Three counties were infected. The child from whom the swab was taken died before it could receive the serum. Another child in the same family was seriously ill from meningitis.

Dr. C. C. Bass, New Orleans: Rigidity of the neck is an important sign in connection with the diagnosis of meningitis. Meningitis is accompanied constantly by fever. These two signs are sufficient to justify a suspicion of the presence of meningitis. Lumbar puncture is indicated, with examination of the cerebrospinal fluid.

Dr. L. E. La Fetra, New York: Pneumonia may simulate meningitis, and if there is suspicion of meningitis. lumbar puncture should be made. In certain cases of poliomyelitis there will be fever and, at times, leukocytosis and stiffness of the neck. These are the cases which have marked sensory symptoms and hypersusceptibility of the nervous system generally.

Dr. L. W. Elias, Asheville, N. C.: The directions are to give one dose of serum every day for four days, and if the patient improves, to wait and watch. Other directions which seem to be more accurate are to give the serum until the fluid is germ-free.

Dr. C. C. McLean, Birmingham, Ala.: I have seen two cases of sudden death following injection of the serum. The blood-pressure should be taken along with the injection, and as soon as the blood-pressure begins to rise, the injections should be stopped.

Dr. Henry Hanson, Jacksonville, Fla.: The use of autogenous vaccines is not of much benefit in carrier cases. A great many of these are simply mechanical carriers, and the organisms are not very closely associated with the circulation of the individual; hence it would be unusual to expect a vaccine to be very efficacious. Another point to consider is the virulence of the organism in carrier cases.

### Milk in Its Relation to Infant Mortality

Dr. Henry Enos Tuley, Louisville, Ky.: The formation of infant-welfare associations is one of the ways to reduce infant mortality. The medical profession is remiss in not taking a more active part in all social service movements and should help to organize an association for the distribution of clean milk. The work of the nurse in the homes is also a great help. Under no circumstances should swill be fed to dairy cattle, even if legislative enactment is necessary before the practice is stopped. Recent investigations have pointed out a new menace, namely, the infection of cow's milk with the *Bacillus abortus*, and it has been advocated that certified milk as well as market-milk should be pasteurized, or preferably boiled under official supervision. Milk is a carrier of contagion, and it can be rendered safe possibly for the market-supply by pasteurization or sterilization. These procedures should be under the supervision of municipal control, and the consumer educated in the care of the milk in the home.

### Treatment and Cure of Malaria

Dr. C. C. Bass, New Orleans: Perhaps the most perfect specific in medicine is quinin for malaria, but it is a specific only when administered properly. The asexual cycle of malarial plasmodia which causes the common symptoms of malaria in man takes place partly in the blood-stream and partly in the capillaries. The plasmodia lodge in the capillaries and remain until they segment. The time spent lodged in the capillaries varies with the different species of plasmodia. The estivo-autumnal parasite, the most malignant of them all, remains lodged in the capillaries for at least thirty-six out of each forty-eight-hour period or cycle. During the time the parasites are lodged in the capillaries they are beyond the reach and effect of quinin in the blood-stream. Therefore it is necessary to keep quinin in the blood for a period of at least forty-eight hours and preferably seventy-two hours or three days. Thirty grains of quinin on each of three consecutive days always destroys all asexual plasmodia in the patient. There are no exceptions. Relapses result in some manner not now well understood from reproduction of sexual plasmodia or gametes, which are usually present in variable number. They reproduce in seven days and multiples of seven days, and give rise to the relapses occurring usually on the seventh, fourteenth, twenty-first and sometimes twenty-eighth days. Gametes are not killed by quinin or any other drug but their products of reproduction are killed by quinin. Thirty grains of quinin, once a week, for six weeks, will always sterilize the blood of all plasmodia after the asexual parasites have been destroyed by the first three days of quinin treatment. Continuous administration, especially of small doses of quinin, favor or increase the number of gametes and insure relapse or chronicity.

### Treatment of Pellagra

Dr. Seale Harris, Mobile, Ala.: In beginning the treatment of pellagra I usually give several small doses of calomel, 1/20 grain, every hour until ¼ grain is given, then bismuth subnitrate in doses of from ½ to 1 dram, with 5 grains of phenyl salicylate every two or four hours as may be necessary to control diarrhea. I have rarely found it necessary to use opium. When there is absence or deficiency of hydrochloric acid, dilute hydrochloric acid with pepsin often relieves the gastric symptoms and will not infrequently control diarrhea. Colonic irrigation with normal salt solution is often helpful. When there is stomatitis with ptyalism, potassium chlorate, given internally, yields splendid results. Mild antiseptic mouth washes, as diluted liquor antisepticus alkalinus, are helpful. Fowler's solution should be given in ascending doses of from 1 to 15 or even 20 drops, three times a day, or until the physiologic effects are obtained.

### Pathology of the Heart in Rheumatic Infection in Children

Dr. W. W. Harper, Selma, Ala.: In children endocarditis is often the only symptom of rheumatism. A primary attack of rheumatic endocarditis is not ulcerative, but usually leaves the heart-valves in such a condition that vegetations frequently develop during a second attack of rheumatism. Such valves are especially vulnerable should the patient be attacked subsequently by any of the pus-producing bacteria, such as the pneumococcus, streptococcus or colon bacillus.

### Central Cirrhosis of the Liver

Dr. V. H. Bassett, Savannah, Ga.: I had a case of central cirrhosis of the liver with acute endocarditis of gonorrheal origin in a man aged 22, following an acute attack of specific urethritis. The symptoms were fever with delirium, dyspnea, hemoptysis, icterus and generalized edema. The course of the disease was about eight weeks. At necropsy an acute ulcerative and vegetative endocarditis of the mitral valve, with a stenosis, was found, with hypertrophy and dilatation of the right side of the heart. The lungs showed the changes of chronic passive congestion. The liver did not resemble a nutmeg liver, but differed from a normal liver only in being somewhat cloudy, paler and somewhate firmer in consistency. The condition of fibrosis of the centers of the lobules was not suspected from the anatomic condition, but was found on making microscopic sections of the liver. The fibrosis was diffuse, affecting the centers of practically all the lobules, and occupied a space of a round or oval character, about equal in width to one-fourth of the radius of the lobule. The connective tissue was young and there was little pigmentation or other evidence of a previous chronic passive congestion of any extent.

Dr. W. A. Dearman, Long Beach, Miss.: I collected from a bed which a pellagrin had occupied for six months, a large number of bedbugs. I induced these bedbugs to bite and abstract blood from the large vein underneath the wing of a full-grown chicken. After a few minutes they were removed to a test-tube. This process was repeated at intervals of every other day for about three weeks; many of the bugs by this time were dead. Up to this time (a period of about four months) no lesions have developed in this chicken. On several occasions my attention was attracted by the malignancy of certain cases of pellagra in persons in whose premises were found mangy dogs, heavily infested with fleas, (*Ctenocephalus serraticeps*). These dogs were in the habit of sleeping on the beds in the daytime. One of these patients, a negro woman, gave a history of having been heavily infested with fleas from this dog, and had noticed no signs of her pellagrous condition until she had come in possession of the dog. I placed the dog in a cage with a full-grown rhesus monkey and kept them continuously associated for thirty-seven days. The monkey soon became heavily infested with fleas from this dog, as they could be seen crawling on her body and buried in the skin. The dog died from emaciation and a black diarrhea. After three months no signs of pellagra have developed in the monkey.

I feel inclined to doubt that the cause of the disease is lurking in spoiled corn. I believe that pellagra is in all probability an insect-borne disease, and the dog- and cat-flea should be looked on with suspicion.

### The Abderhalden Test

Dr. William Krauss, Memphis, Tenn.: The causes of failure may be said to be the serum, the placenta, faulty dialyzing thimbles, old or improperly stored ninhydrin solution or faulty technic. I prefer Schwartz' plan of boiling 5 c.c. of the dialysate with 0.1 c.c. of ninhydrin. I use a marked wide test-tube and restore the bulk after boiling for one minute. There have been no failures either way in the two tests made since adopting my latest technic, but I expect to meet them with more experience. I think that inactivated serum is the best control.

### Tuberculosis

Dr. E. C. Thrash, Atlanta, Ga.: I believe that tuberculosis is as certainly an alimentary disease primarily as is typhoid.

My experience in handling large numbers of children of tuberculous parents has been that practically all of them have tuberculous adenitis, and are positive to the Moro and von Pirquet tests, showing that they have become infected from their parents. I rarely find one with lung involvement. Also most of the children on whom I have held a post-mortem examination have died of chronic wasting diseases due to disturbances of nutrition and have shown tuberculous infections in the lymph-nodes of the abdomen, with normal lungs.

### Distinction between an Infection by Tubercle Bacilli and Tuberculosis

Dr. Mary E. Lapham, Highlands, N. C.: Tuberculosis enters every home. All children are infected before maturity. It is impossible to avoid the infection. Children should be examined by experts in order to detect the first changes before harm has been done. Tuberculosis in well persons is the most dangerous because it is never suspected. All animals have tuberculosis because the bacilli are universally present in their food. Four hundred thousand children in the United States are infected with tubercle bacilli from the milk of cows. It is not enough to protect a child from exposure to contagion. The infection by tubercle bacilli is not prevented by quarantine or segregation. The development of this inevitable infection must be arrested by its prompt detection. This can be assured only by regular examinations by competent experts. The prevention of tuberculosis can never be accomplished by obliteration. Detection and no delayed diagnoses are our surest safeguards.

### Protection for the Postsanatorium Tuberculous Patient

Dr. L. B. Morse, Hendersonville, N. C.: I wish to lay down some general rules for the guidance of ex-sanatorium patients: Place yourself under the care of a good physician. Approximate the sanatorium life closely, particularly in the beginning. Rest in bed for one week. Increase exercise (walking) with exceeding care both as to time and to distance, and note results. Take the precaution to "rest before getting tired." Make regular hours a conscientious habit, both as to rest, exercise, meals and sleep. Keep away from every sort of amusement and entertainment until thoroughly cured. Reduce visiting to a minimum. Maintain, if possible, a good body-weight. Be scrupulously particular regarding the morning bowel movement. With increasing strength, exercise an increasing pride in the maintenance of a good bodily posture. Taboo all dissipation. Protect yourself if possible from all worry and strain. Do not remain in the same room with a patient suffering from any sort of acute inflammation of the nose or throat. Finally, remember always that the things that made you well, in the main, are the things that will keep you well.

### The Evolution of the Treatment of Ectopic Pregnancy

Dr. Stuart McGuire, Richmond, Va.: All surgeons agree that an operation should be done in a case of unruptured tubal pregnancy as soon as the diagnosis is made. There is a serious difference of opinion among the best surgeons as to when to operate in a case after rupture occurs. I favor an immediate operation, not only because it is in accord with general surgical principles, but also because I have seen the practice save apparently moribund patients. I am opposed to the removal of the opposite tube, unless it is clear that the tube is diseased. If by leaving it I have subjected some patients to a second operation that might have been avoided, I have with equal certainty made possible the birth of some babies that otherwise would not have come into existence.

### Ovariotomy Sub Partu

Dr. W. Kohlman, New Orleans: The important points in the treatment of these complications are: 1. Vaginal ovariotomy in small tumors without adhesions is to be followed by delivery by the natural passages. 2. Cesarean section and abdominal ovariotomy should be the operation of choice in all cases of solid tumors, cystic tumors, with probable adhesions, or intraligamentous development, or in all conditions in which a prolonged and difficult labor is suspected.

# *Current Medical Literature*

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## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Diseases of Children, Chicago

*December, VI, No. 6, pp. 381-448*

1 *Duodenal Ulcers in Infancy. L. E. Holt, New York.
2 *Casein in Infant Feeding. H. I. Bowditch and A. W. Bosworth, Boston.
3 *Parotitis Complicated with Meningitis. G. N. Acker, Washington, D. C.
4 *Case of Congenital Cyst of Thyroid in Child Aged 1 Year, Producing Death by Asphyxiation. H. C. Clark, Ancon, C. Z., and A. G. Farmer, Gatun, C. Z.

1. **Duodenal Ulcers in Infancy.**—Regarding the treatment of this condition, Holt says: Medical treatment is to be symptomatic only, and surgical treatment is as yet inadvisable in most cases. He reports four fatal cases and reviews the literature.

2. **Casein in Infant Feeding.**—The authors claim that formulas with exact percentages of protein can be obtained by determining the percentage of casein in the creams and milks used, and further, that powdered dry casein and paracasein can be used in making up shortage of protein in place of fat-free or skim milk. This powdered dry casein or paracasein is very easily digested, and is capable of furnishing all the protein requirements of the growing baby.

3. **Parotitis Complicated with Meningitis.**—Acker cites two cases and reviews the literature briefly.

4. **Congenital Cyst of Thyroid in Child.**—During the past three and a half years, at the Board of Health laboratories, Ancon, 21 specimens of thyroid glands showing large colloid cysts associated with hemorrhages and fetal adenomata have been received from the surgical clinic of Ancon Hospital, and 4 similar cases have been found at necropsy during the same interval of time. Sixteen of them occurred in females and 9 in males. Thirteen of these cases were in Americans, all but one being females. Seven were in male Spaniards, one instance in a male Panamanian and one in a male Greek. Only 3 of the 26 cases occurred in negroes: 2 female Jamaicans and a female Barbadian. The ages ranged from 19 to 61 years, the average being about 38 years. A fair idea of race incidence at Ancon Hospital may be had from a recent analysis of 1.500 successive necropsies in which 1,088 were West Indian negroes, 230 Spanish-Indian mixture, 108 Spaniards, 25 Americans, the other 49 being divided among the various countries of the old world. Thus, the authors state, one may form an idea as to the relative frequency of thyroid disease among the Spaniards and Americans and the low percentage in the black race.

### American Journal of Medical Sciences, Philadelphia

*December, CXLVI, No. 6, pp. 781-936*

5 *Pathology of Thyroid in Exophthalmic Goiter. L. B. Wilson, Rochester, Minn.
6 *Clinical and Pathologic Relationship of Simple and Exophthalmic Goiter. H. S. Plummer, Rochester, Minn.
7 *Demonstration of Depressor Substance in Serum of Blood of Patients Affected with Exophthalmic Goiter. J. M. Blackford and A. H. Sanford, Rochester, Minn.
8 Antityphoid Vaccination. F. F. Russell, Washington, D. C.
9 Cutaneous Manifestations of Septicemia. J. W. Churchman, New Haven, Conn.
10 Further Experience in Surgical Treatment of Brachial Birth Palsy (Erb's Type). A. S. Taylor, New York.
11 Further Experiences with Stretching of Pylorus. M. Einhorn, New York.
12 *Large-Cell Splenomegaly (Gaucher's Disease): Clinical and Pathologic Study. N. E. Brill and F. S. Mandelbaum, New York.
13 Metallic Poisons and Nervous System. G. A. Moleen, Denver.
14 Metabolism, Prevention and Successful Treatment of Rheumatoid Arthritis: Second Contribution. R. Pemberton, Philadelphia.

5. **Thyroid in Exophthalmic Goiter.**—A detailed pathologic study by Wilson of fixed tissue preparations from 1,208 thyroids, removed from patients whose condition would ordinarily have been diagnosticated exophthalmic goiter, showed that 79

per cent. of the thyroids contained large areas of marked primary hypertrophy and hyperplasia. A parallel clinical study has shown that for a period of three years all patients with true exophthalmic goiter, and from whom gland tissue was removed, fall into this list. In the series of 1,208 so-called "exophthalmic goiters" plus 585 so-called "simple goiters," or a total of 1,793 thyroids, but four instances of marked primary hypertrophy and hyperplasia of the parenchyma have been noted in cases which did not show clinical symptoms of true exophthalmic goiter. Three of these four patients were children. Twenty-one per cent. of the 1,208 glands studied were either regenerations or adenomas. Clinically, while all of these were markedly toxic, all were chronic and none of them would now be grouped clinically as true exophthalmic goiter. By assuming that the symptoms of true exophthalmic goiter are the results of an excretion from the thyroid, and by attempting to determine the amount of such excretion from the pathologic data, Wilson says one is able to estimate in a large series of cases the clinical stage of the disease with about 80 per cent. of accuracy and the clinical severity of the disease with about 75 per cent. of accuracy. It would therefore appear that the relationship of primary hypertrophy and hyperplasia of the parenchyma of the thyroid to true exophthalmic goiter, is as direct and as constant as is primary inflammation of the kidney to the symptoms of true Bright's disease. Any considerable finding to the contrary Wilson believes to indicate either inaccurate or incomplete observations on the part of the pathologist or clinician, or both.

6. **Exophthalmic Goiter.**—Of 2,917 cases coming to operation between Jan. 1, 1909, and Jan. 1, 1913, and analyzed by Plummer, 42.8 per cent. were hyperplastic and 57.2 per cent. were non-hyperplastic. Of the hyperplastic 99.2 per cent. were toxic and 0.8 per cent. were atoxic. Of the non-hyperplastic 23.3 per cent. were toxic and 76.7 per cent. were atoxic. Patients coming under observation with non-hyperplastic toxic goiter gave a history of having first noted the goiter at the average age of 22 years, and the evidence of intoxication at the average of 36.5 years: The corresponding ages for hyperplastic goiter were respectively 32 and 32.9 years.

Throughout the series the number of cases in which the clinician failed definitely to note and attribute constitutional symptoms to the thyroid and which were later diagnosed by the pathologists hyperplastic thyroid, varied from two cases in 1909 to four cases in 1912. The pathologic reports failed to show the presence of hyperplasia in the cases in which exophthalmos was noted by the clinician six times in 1909, four times in 1910, twice in 1911, and not in a single instance in 1912. As to whether the symptom-complex accompanying hyperplastic goiter is to be directly attributed to disturbed thyroid function, Plummer says that while he has so considered it in his paper only as a matter of convenience for pointing out the association of the clinical and pathologic findings, he calls attention to a point in support of this theory that, so far as he knows, has not hitherto been made, namely, that an individual, aged 22 years, with an adenoma of the thyroid, has a definite chance of developing a train of symptoms during the thirty-sixth year so similar to the symptom-complex associated with hyperplastic thyroid, that the best-trained diagnosticians are constantly confusing the two conditions. He does not believe that the symptom-complex of non-hyperplastic toxic goiter can be associated with any definite pathologic change in the thyroid.

The order of onset of the most important symptoms of exophthalmic goiter based on the average of the Mayo series was as follows: (1) cerebral stimulation; (2) vasomotor disturbances of the skin; (3) tremor; (4) mental irritability; (5) tachycardia; (6) loss of strength; (7) cardiac insufficiency; (8) exophthalmos; (9) diarrhea; (10) vomiting; (11) mental depression; (12) jaundice, and (13) death.

7. **Depressor Substance in Serum of Blood of Patients with Exophthalmic Goiter.**—The serums from twenty-eight patients having exophthalmic goiter were used by Blackford and Sanford. Other serums examined included those from normal individuals, from patients having goiters without apparent intoxication, and from patients presenting the picture of a long-standing intoxication, presumably due to adenomas of the thyroid. Only the serums from patients with active symptoms of exophthalmic goiter and with markedly hyperplastic glands, as shown by microscopic examination, produced in the dogs injected any definite symptoms of cardiovascular depression.

The results of these experiments convince the authors that fresh extracts made from exophthalmic thyroids contain a powerful depressor substance. A powerful depressor substance likewise exists in the serums obtained from certain cases of exophthalmic goiter. The latter substance is present in direct proportion to the clinical acuteness and severity of the disease. The serums from patients with non-hyperplastic thyroids do not have a depressor action. After an active depressor dose of the serum from a case of exophthalmic goiter the depressor action of the extract of an exophthalmic goiter is weakened or abolished. The converse is also true.

12. **Gaucher's Disease.**—Brill and Mandlebaum believe that the disease starts simultaneously in the spleen, bone-marrow and lymph-nodes. In the last, however, it may appear somewhat later or be slower in development, an assumption which finds its support in the fact that they have found in a very early case, a child aged 4½ years, the process in some of the nodes to be far less advanced than in the spleen and marrow.

### American Journal of Orthopedic Surgery, Philadelphia

*October, XI, No. 2, pp. 193-365*

15 Roentgenography of Vertebral Column in Profile in Pott's Disease. J. Calve and H. Lelievre, France.
16 *Experience with Foerster's Operation. S. J. Hunkin, San Francisco.
17 *Importance of Positive Support in Curative Treatment of Weak Feet and Comparison of Means Employed to Assure It. R. Whitman, New York.
18 Treatment of Hollow Foot (Pes Cavus). G. G. Davis, Philadelphia.
19 *Recurrent Anterior Dislocation of Shoulder. J. K. Young, Philadelphia.
20 Mechanical Treatment of Some Fractures, viz., (1) Lower End of Humerus; (2) Both Bones of Leg. F. E. Peckham, Providence, R. I.
21 *Neglected Infantile Paralysis. W. Blanchard, Chicago.
22 *Heliotherapy (of Rollier) as Adjunct in Treatment of Bone Disease. R. Hammond, Providence, R. I.
23 Value of Exhaustive Critical Studies and Generalizations in Chronic Joint Diseases. H. W. Marshall, Boston.
24 Development of Orthopedic Teaching in America. C. F. Painter, Boston.
25 *Orthopedic View of Treatment of Fractures. R. Jones, Liverpool, Eng.
26 Method of Osteotomy of Lower End of Femur in Cases of Permanent Flexion of Knee-Joint. R. B. Osgood, Boston.
27 Duralumin, New Alloy for Orthopedic Appliances. J. K. Young, Philadelphia.

16, 17, 21 and 22. Abstracted in The Journal, June 14, pp. 1916 and 1917.

19. **Recurrent Anterior Dislocation of Shoulder.**—Young first locates the pectoralis major muscle. A grooved director is placed beneath this muscle and its lower portion divided. The long tendon of the biceps may be displaced inward, and the broad flat tendon of the latissimus dorsi can be hooked up by the finger, or by some blunt instrument, such as an Allis' dissector; the insertion of the tendon is exposed and the lower half divided. No attention is paid to the capsular ligament. The bicipital groove was exposed by an incision over the space between the deltoid and pectoralis major muscles, and the cephalic vein was displaced outward. The pectoralis major and the deltoid muscles were brought together with deep catgut sutures. The skin was closed with a continuous suture and the arm dressed in an extended position on a triangular splint and kept in that position for a period of two weeks. Following the operation, and on the recovery of the patient, there was no loss of power over this shoulder as compared with its fellow, nor has there been a recurrence, although the man has again resumed his occupation and has taken part in several games of soccer since.

25. **Treatment of Fractures.**—Fractures of the shaft of the humerus, says Jones, may be troublesome from two causes—either on account of damage to the musculospiral nerve

through injury or inclusion in callus, or due to non-union, the latter being generally caused by inefficient fixation. Many cases of supposed permanent damage to the musculospiral nerve are cured in a few weeks by application of a splint which holds the wrist in dorsiflexion. The patient generally goes about from the beginning of treatment. There is not room for the thick splint frequently employed to lie comfortably in the axilla between the patient's arm and the body, and hence the arm is not as firmly fixed as it should be. Sheet-metal splints occupy very little space. The best method in Jones' opinion, of setting these fractures, especially when working single-handed, is the following: First get ready three sheet-metal splints. The external one extends from the external condyle to well above the shoulder and its upper end is bent over to form a sort of shoulder cap. A short splint extends from above the internal condyle to the anterior fold of the axilla, and a similar posterior one to the posterior fold of the axilla. Flex the elbow to an angle of about 60 degrees and sling the wrist to the neck, with the patient sitting in a chair. A loop of bandage is put around the flexure of the elbow and does not reach the floor. By putting one foot in this loop, the surgeon can apply as much extension as he chooses, while both hands are free to manipulate the fractured ends into correct position. The splints are applied and squeezed up till they fit closely around the arm. A turn of sticking plaster now binds them into a cylinder fitting the arm. A sheet of wadding is then placed between the arm and the chest. The whole is secured with a broad bandage carried over the shoulder and the part of the external splint which is turned over like a shoulder cap. This prevents shortening, for the lower end of the cylinder fits around the arm above the condyles. As the whole arm is in a close-fitting cylinder, displacement cannot easily take place, and the patient is quite comfortable. Except to free the musculospiral nerve from callus, operation is rarely necessary, for even if there is some overriding of fragments a little shortening of the arm does not give rise to any serious impairment of function to the ordinary man. All fractures through the condyles and indeed all fractures about the elbow, except fracture of the olecranon, are best treated in the fully flexed position. For the first few days the forearm, fully supinated, should be bandaged to the upper arm in fullest flexion; after this it is sufficient to keep the wrist slung short up under the chin.

### Boston Medical and Surgical Journal

*December 4, CLXIX, No. 23, pp. 817-852*

28 Nervous Irritability of Chronic Renal Disease. W. H. Robey, Boston.
29 Method of Promoting Efficiency of Out-Patient Clinic. M. M. Davis and E. W. Barron, Boston.
30 Report of Voice Clinic, September, 1912, to June, 1913, Out-Patient Department of Psychopathic Hospital. W. P. Lucas, San Francisco.
31 Conditions and Treatment of Stuttering. C. Charnley, Boston.
32 Digitalis: Its Action and Uses. W. R. Steiner, Hartford, Conn.
33 Treatment of Vocal Disorders. C. Charnley, Brookline, Mass.

### Bulletin of Johns Hopkins Hospital, Baltimore

*December, XXIV, No. 274, pp. 363-396*

34 *Treatment of Leukemia with Benzol. L. F. Barker and J. H. Gibbes, Baltimore.
35 *Bence-Jones Proteinuria in Leukemia: Report of Four Cases: Effect of Benzol on Excretion of Protein. T. R. Boggs and C. G. Guthrie, Baltimore.
36 Cauterization of "Inoperable" Carcinoma of Cervix of Uterus. H. A. Kelly and J. C. Neel, Baltimore.
37 *Tests for Hepatic Function: Clinical Use of Carbohydrates. A. L. Bloomfield and S. H. Hurwitz, Baltimore.
38 *Tests for Hepatic Function: Lactose Tolerance as Influenced by Liver Necrosis of Chloroform Poisoning. S. H. Hurwitz and A. L. Bloomfield, Baltimore.

34. **Treatment of Leukemia with Benzol.**—In the case cited by Barker the course of benzol administration extended over approximately eleven weeks during which period the total number of white blood-cells returned to normal, the red blood-cells increased from 3,600,000 to 5,000,000, the hemoglobin changed from 65 per cent. to 82 per cent., and the patient's general condition showed definite improvement. In as far as he can judge of this new line of therapy in leukemia from the observation of the case reported, Barker shares the belief of most authors as to its efficacy in reducing the white blood-cells, and in leading to an associated subjective improvement of the patients. His patient progressed in a satisfactory manner with the exhibition of benzol alone, but he feels that the possible value of other accessory measures, such as Roentgen rays, arsenic, thorium-X and radium in the therapy of leukemia should be kept in mind. The ultimate place of benzol in the treatment of leukemia, polycythemia and Hodgkin's disease can be determined only through further studies which include careful clinical observations. Barker emphasizes the facts, first, that benzol does possess dangerous toxic properties; second, that its clinical effects are not yet clearly understood, and, third, that the greatest care should be exercised in its administration. A studious regard for the dosage as thus far determined, a watchfulness for the manifestations of poisoning that are well defined and easily detected, and a willingness to employ other measures in conjunction with this drug, in Barker's opinion, are means that will serve to give the new treatment a fair trial and prevent its falling into an undeserved disrepute. Certainly, no patient should be treated by benzol unless he can be kept under continuous close observation; for the present, therefore, it may be well to restrict its use to the treatment of patients in hospitals, rather than to run the risks attendant on its extension to domiciliary practice.

35. **Bence-Jones Proteinuria in Leukemia.**—So far as Boggs and Guthrie have been able to ascertain, three of their cases are the first reported instances of Bence-Jones proteinuria in association with myeloid leukemia. It has never been observed in the acute forms of the disease, either lymphatic or myeloid, and, including the cases presented here, only eight times in the chronic varieties. The Bence-Jones protein alone was present in two cases, while Möner's body also was present in the other two cases, as well as serum albumin in one case. The excretion of the Bence-Jones body was small in amount, which seems to be characteristic when it occurs apart from multiple myeloma. The chlorid output was normal in one case, which is markedly different from the condition found in two other cases and in cases of myelomatosis and carcinomatosis. In two cases the effect of the benzol treatment is especially noteworthy, in that a marked reduction or eventual disappearance of the proteinuria and its associated polyuria, occurred, parallel to the diminution in the leukocytosis and apparent approach of the bone marrow to a more nearly normal condition. These cases furnish additional confirmation of the previously expressed view, that Bence-Jones proteinuria is not essentially dependent on one disease, but is a manifestation of disturbances in the bone marrow affecting endogenous metabolism.

37. **Tests for Hepatic Function.** — A consideration of the extrahepatic factors involved in the sugar regulating metabolism, the influence of the glands of internal secretion and of the vegetative nervous system, the ability of other tissues than the liver to handle sugar, and the ability of the uninjured liver substance to compensate in disease leads the authors to say that the sugars are theoretically unsatisfactory as tests for hepatic insufficiency. There are a series of great practical difficulties in applying the tests; namely, nausea, vomiting and diarrhea after feeding, faulty absorption, intestinal fermentation, portal obstruction with collateral circulation, retention of sugars in nephritis, and inconstancy in the diet. There are serious objections to the methods as they have been applied; namely, the use of arbitrary amounts of sugar, and the use of a definite standard of excretion. An analysis of the reports show their significance to be lessened owing to confusion in the conception of hepatic insufficiency, insufficient clinical data and neglect of the practical considerations mentioned.

38. **Idem.**—Hurwitz and Bloomfield are convinced that there is experimental evidence to show that in the intestinal tract of dogs lactose is split into its constituent molecules—dextrose and galactose—and that after feeding lactose to dogs, galactose is excreted in the urine. Studies by various workers show that when lactose is split, the liver can form glycogen from galactose, but to a more limited extent and with greater difficulty than from the other monosaccharids. The experi-

ments cited by the authors show that it is more accurate to determine the tolerance of an animal before producing a liver injury than to accept arbitrary standards of normal tolerance, expressed either in total number of grams or in grams per kilogram of body weight. Whereas the normal tolerance of dogs for lactose expressed in grams per kilogram of body weight is fairly constant, the total number of grams tolerated by different animals shows wide variations. Eck fistula dogs show a reduced tolerance for lactose, which, however, may result from flooding of the systemic circulation with sugar rather than from liver injury. In susceptible animals, central necrosis produced by chloroform poisoning results in the reduction of the lactose tolerance by 50 per cent. or more. In one animal with chronic passive congestion of the liver, no reduction in the lactose tolerance could be demonstrated.

### Journal of Outdoor Life, New York

*December, X, No. 12, pp. 352-382*

39 Tuberculosis and Anti-Tuberculosis Work in Japan. A. K. Faust, Sendai, Japan.
40 Hygiene of Bedroom and Baths. H. L. Shively, New York.
41 Decline in Tuberculosis Death Rate. F. L. Hoffman, Newark, N. J.
42 Rational Treatment of Tuberculosis. G. M. Sternberg, U. S. Army.

### Medical Record, New York

*December 6, LXXXIV, No. 23, pp. 1013-1058*

43 Serologic Tests in Cerebral Hemiplegia. C. L. Dana, New York.
44 Colds and Their Relation to Physics of Atmosphere. C. M. Richter, San Francisco.
45 Venereal Diseases and Practical Eugenics in Small Communities. E. H. Williams and J. S. Brown, Montclair, N. J.
46 Vienna, Postgraduate Medical and Surgical Mecca. A. M. Fauntleroy, U. S. Navy.
47 *Gumma of Prostate and Bladder. J. O. Rush, Mobile, Ala.
48 Partial Facial Paralysis due to Traumatism. B. Rosenbluth, New York.
49 *Tuberculosis and Von Pirquet Test in Children. L. Shalet, New York.
50 Case of Pneumococcus Septicemia. G. A. Rueck. New York.
51 Hemostat as Safety Blade Holder. A. M. Miller, Danville, Ill.
52 New Kidney Cushion. W. G. Vincent, New York.

47. **Gumma of Prostate and Bladder.**—Six intravenous and one intramuscular injection of salvarsan and twenty-six intravenous injections of neosalvarsan were given by Rush to a patient 66 years old, with good result, viz., the disappearance of edema, the disappearance of all bladder and prostatic symptoms, and the continued improvement with the steady use of the drug.

49. **Tuberculosis in Children.**—Shalet urges that no ambulant case of possible tuberculosis occurring in children under 16 years of age, be diagnosed as such unless the same reacts positively to the von Pirquet test.

### Michigan State Medical Society Journal, Grand Rapids

*December, XII, No. 12, pp. 635-682*

53 Shall Total Death Rate in Cancer Be Ascribed to Malignancy? W. Fuller, Chicago.
54 Great Need of Early Diagnosis of Uterine Cancer. J. H. Carstens, Detroit.
55 *Endocarditis due to Streptococcus Rheumaticus and to Streptococcus Viridans. R. H. Babcock, Chicago.
56 Heart in Pregnancy. H. A. Freund, Detroit.
57 Value of Anoci-Association in Abdominal Surgery. H. W. Hewitt, Detroit.
58 Two Cases of Abnormally Situated Placentae. W. H. Morly, Detroit.
59 Abdominal Cutaneous Reflexes in Diagnosis of Acute Abdominal Diseases. R. R. Smith, Grand Rapids.
60 *Stenosis of Cervix Uterus: Treatment by New Method. J. D. Matthews, Detroit.

55. **Endocarditis.**—Babcock emphasizes the fact that there must exist some focus of infection from which streptococci may gain access to the lymph-stream and blood. Such a focus may exist in the appendix, gall-bladder, intestine or any other closed cavity, but without doubt the most frequent atrium of infection is the tonsil, and the viridans streptococcus has been obtained from an inflamed tonsil at the height of articular rheumatism. Furthermore, by cultural methods *Streptococcus hemolyticus* has been converted into the *Streptococcus viridans*, and the latter into the pneumococcus. The human body is capable of transforming the *Streptococcus hemolyticus* into the *Streptococcus viridans*, so that a child with chronically infected tonsils may get an acute endocarditis or the far more terrible form caused by the viridans organism. Consequently, whenever a victim of valvular disease, particularly of aortic regurgitation, has tonsils that have been inflamed and are no longer healthy, Babcock says they should be extirpated, and he emphasizes the fact that tonsillectomy in a child with valvular disease is safer under ether and by a rapid, skilled operator than if the patient is left to the risk of streptococcus infection from the tonsils left *in situ*. In other words, the risk of this operation is less than is the danger of subsequent ulcerative endocarditis. Chronically diseased tonsils are not always enlarged, nor are they always red, for even small buried tonsils may and often do contain in their center a pocket of pus.

That malignant endocarditis due to the *Streptococcus viridans* is most often the sequel of a throat infection has been impressed on Babcock by the frequency with which he gets a history of the ill-health having begun as a so-called "attack of the grippe." Autogenous vaccines by assisting the system to destroy circulating bacteria may lessen the intensity of the symptoms and may even retard but cannot reach the organisms imbedded in the vegetations and protected by a covering of fibrin. Consequently our aim should be the prevention of this frightful malady, and since the preponderance of evidence is in favor of diseased tonsils as the atrium of infection it should be our duty to so inform patients with valvular lesions. The complete enucleation of the tonsils may not be a guarantee against future endocarditis of this viridans type, but it is a safeguard and hence should be resorted to whenever an individual having once suffered from endocarditis is subject to recurrences of tonsillar inflammation or has tonsils that are no longer healthy and capable of performing their normal function.

60. **Stenosis of Cervix Uteri.**—After proper dilatation Mathews seizes the anterior lip of the cervix with a volsellum forceps; the lateral borders are grasped by tenaculum forceps; a straight scissors is used in dividing the posterior, or under lip, to the internal os. A curved needle with a silk or No. 1 catgut is introduced, catching the mucous coat and brought through, taking up the mucous coat posteriorly; the ligature is tied. The same procedure takes place on the two lateral surfaces of the wound. The vagina is packed with sterile gauze which is left in position twenty-four hours. The patient is placed in bed for ten days, after which she is allowed to return to her home.

### Mississippi Medical Monthly, Vicksburg

*December, XVIII, No. 8, pp. 147-166*

61 Treatment of Laryngeal Diphtheria. T. F. Clay, Tutwiler.
62 Adenoids. D. G. Mohler, Gulfport.
63 Three Cases of Tetanus Neonatorum. L. D. Harrison, Clarksdale.

### New Orleans Medical and Surgical Journal

*December, LXVI, No. 6, pp. 431-502*

64 Removal of Wire Nail from Stem Bronchus to Lower Lobe of Right Lung. R. C. Lynch, New Orleans.
65 Suprapubic Intraurethral Prostatectomy: Report of Case. F. C. Walsh, San Antonio, Tex.
66 Results of Sanatorium Treatment of Tuberculosis: Advantages, Cost, Etc. E. L. McGehee, New Orleans.
67 *New Device for Treatment of Fractures. F. W. Parham and E. D. Martin, New Orleans.
68 Emergency Surgery of Skull, with Case Reports. R. C. Kemp, Baton Rouge.
69 Acne: Treatment and Prognosis. J. N. Roussel, New Orleans.
70 Problem of Mental Diseases as Neglected Study: Its Cost to Society and Individual. C. V. Unsworth, New Orleans.
71 Typhoid. E. S. Matthews, Bunkie, La.

67. **Device for Treating Fractures.**—The device used by Parham and Martin—a band from 1 to ⅜ of an inch in width, 6 inches long, with a slit in one end and a small hole in the other—is passed around the bone quite easily by bending to a suitable angle; this is readily accomplished, as the bands are made of malleable iron. The free end is then inserted through the slot in the instrument, made fast to the pin on the screw lever, and with it sufficient force is exerted to make it fit snugly around any unevenness of the bones. It is fixed in position by slightly relaxing the screw as the instrument

is turned back over the slit, and is cut to any desired length by holding between the blades of a strong pair of scissors or bone-cutters and worked to and fro several times. The cut end is then pressed down and the band remains fixed.

### New York Medical Journal

*November 29, XCVIII, No. 22, pp. 1045-1092*

72 Cure of Ataxia. W. J. M. A. Maloney, New York.
73 Diagnosis of Arteriosclerosis. L. F. Bishop, New York.
74 Medical Treatment of Surgical Cases. J. H. Jopson, Philadelphia.
75 Infections of Hand. I. S. Haynes, New York.
76 *Criminal's Place in Psychiatry.* H. M. Friedman, New York.
77 Surgical Aspects of Exophthalmic Goiter. R. E. Davison, Pittsburgh.
78 Study of Action of Oxygen, Hydrogen Dioxid and Ozone Gas on Growth of Certain Bacteria. S. E. Finch, New York.
79 Report of Case of Carcinoma of Face. E. S. Maxson, Syracuse.
80 Acute Pellagra or Dermatitis Exfoliativa? W. H. Spurgin, London, Eng.

*December 6, XCVIII, No. 23, pp. 1093-1140*

81 Physical, *Mental and Moral* Vigor of Our Schoolchildren. S. A. Knopf, New York.
82 *Oil-Ether Anesthesia. J. T. Gwathmey, New York.
83 Cancer of Uterus *and American Society* for Control of Cancer. L. Broun, New York.
84 Diagnosis of Acute Abdominal Conditions. J. T. Scheel, Philadelphia.
85 Indications for Operating in Acute Mastoiditis. G. H. Cocks, New York.
86 Relation of Hyperthyroidism *to Nervous System.* A. C. Buckley, Philadelphia.
87 High Frequency Cauterization in Treatment of Urethral Caruncle. S. Wiener, New York.
88 Cancer. J. A. Guthrie, Portsmouth, Va.

82. **Oil-Ether Anesthesia.**—The mixture used by Gwathmey for adults (2 ounces of olive oil and 6 ounces of ether) is given with the patient in bed on the left side, in the Sim's position, a convenient lifter having previously been placed under him. A small catheter, well lubricated, is inserted 3 to 4 inches within the rectum; to this catheter a funnel is attached. The mixture should be poured slowly into the funnel, at least five minutes being consumed in administering 8 ounces, the usual amount required. It is best not to withdraw the tube immediately, but to wait until the patient is partly unconscious and the muscles are relaxed. From five to twenty minutes (according to the percentage used) should be allowed for the anesthetic to take effect, before the patient is moved. The patient should then be lifted gently on a stretcher and carried to the operating room. The anesthetist at this time should see that a clear airway is maintained when necessary, by placing a finger under the symphysis of the lower jaw. If the patient shows sign of approaching cyanosis, loss of lid reflex, stertor, or embarrassed respiration of any kind, two or three ounces of the mixture should be withdrawn by a small rectal tube placed 4 to 6 inches up the rectum. If the breathing is easy and regular, with the reflexes active, the patient will be found to be relaxed and in surgical narcosis as far as the operation is concerned. At the end of the operation, two small rectal tubes should be placed in position, as high up the colon as convenient without traumatism, and cold water soapsuds injected into one tube and drawn off through the other; 2 to 4 ounces of olive oil should then be introduced into the rectum and the tubes withdrawn. The patient should be gently returned to bed, with as little jolting or handling as possible, the room should be darkened, and free ventilation secured. For children under 6 years of age, a 50 per cent. solution should be employed, allowing 1 ounce of the mixture for every 20 pounds of body weight. For patients from 6 to 12 years of age, use a 55 to 65 per cent. solution, without preliminary medication, keeping the patient quiet, and allowing twenty to thirty minutes for the full effect. Allow 1 ounce for every 20 pounds of body weight, as before.

For patients from 12 to 15 years of age, use the same percentages and amounts, with possibly the addition of 1/12 grain of morphin and 1/200 of a grain of atropin given hypodermically as a preliminary.

From 15 years upward, a 75 per cent. mixture is employed, the amount and preliminary medication varying with the size and general condition of the patient and the same rule being followed as to quantity, that is, 1 ounce for every 20 pounds of body weight. For an adult weighing about 160 pounds 8 ounces would be required. This represents the usual dose for the average patient.

### Washington Medical Annals, Washington, D. C.

*November, XII, No. 6, pp. 279-351*

89 Diet in Gastric Ulcer and Hyperchlorhydria. J. B. Nichols. Washington, D. C.
90 Obstructions about Pylorus. J. R. Verbrycke, Washington, D. C.
91 Serotherapy of Epidemic Cerebrospinal Meningitis. H. A. Ong, Washington, D. C.
92 Large Fibroma of Ovary. D. S. Lamb, Washington, D. C.
93 Nitrous Oxid and Oxygen Anesthesia. C. N. Chipman, Washington, D. C.
94 *Intraspinous Injection* of Salvarsanized Serum in Treatment of Syphilis of Nervous System, Including Tabes and Paresis. W. H. Hough, Washington, D. C.

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## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

*November 22, II, No. 2760, pp. 1341-1416*

1 *Treatment of Syphilis in Its Earlier Stages. T. W. Gibbard and L. W. Harrison.
2 Treatment of Syphilis *at Royal Naval Hospital, Chatham.* G. B. Scott.
3 "Standard" Opaque Meal for Radiographic Examinations. A. C. Jordan.
4 Some Acute Abdominal Cases. G. F. Aldous.
5 Anaphylaxis. W. E. Dixon, G. S. Woodhead, F. H. Thiele, D. Embleton and E. W. Goodall.
6 Action of Asbestos Minerals and Allied Materials on Bacterial *and Other Substances.* M. Coplans.
7 Action of Asbestos on Radium and Thorium in Solutions of Their Salts. S. A. Edmonds.
8 *Hyperthyroidism: *Its Experimental Production* in Animals. R. Farbant.
9 Value of Blood-Count as Aid to Diagnosis in Obscure Bacterial *and Other Infections. H. M. Galt.*
10 Empusa Muscle as Carrier of Bacterial Infection from House-Fly. R. M. Buchanan.
11 Two Cases of *Paratyphoid Bacillus Infection Treated* with Vaccine. W. M. Crofton.
12 Action of Asbestos on Certain *Physiologic* Substances. M. Coplans and W. G. Lloyd.
13 Proteose-Free Tuberculin. W. C. Lyons.

1. **Treatment of Syphilis in Early Stages.**—The authors sum up their views as follows: 1. Commence treatment in the early primary stage whenever possible. 2. Destroy the primary sore whenever possible and insist on the patient receiving not less than three salvarsan and ten mercurial injections. 3. On no account neglect subsequent observation, and prescribe a definite course which is just as strenuous as in the first instance if the patient shows the least sign, clinical or Wassermann, that his disease has not been eradicated. 4. Be cautious about pronouncing a patient cured in any case, but certainly do not do so till he has continued free from all signs, clinical or Wassermann, for at least a year after suspension of treatment in primary cases, and two years in secondary cases.

8. **Hyperthyroidism.**—Eleven cats were fed by Farrant on thyroid powder, a 2½ per cent. solution of purified thyroid, previously digested thyroid, and previously boiled thyroid. The doses given were from 1 to 3 grams per day. The effect of the thyroid feeding produced but little change during the first three days. On about the fourth day the animals became suddenly weak and went off their legs; this stage of weakness passed off in about forty-eight hours, but then toxic symptoms set in and slowly progressed until the animals became moribund. Some of the cats appeared for a time to come to a standstill, but they eventually succumbed.

In four the feeding was stopped when they became moribund, as they were required for other purposes. The hairs came out and the fur became unkempt; when the animals died the fur was very thin. There was a gradual loss of body weight from 28 to 53 per cent. Muscular weakness corresponded to the loss of weight. In two cats in which the thyroid feeding was stopped and which were allowed to recover, a steady increase of weight followed. Salivation took place during the later stages of the experiments; its intensity varied with different cats; at the last it was represented by a thick ropy mass hanging from the mouth. The appetite was much increased though occasionally they would refuse all food for two or three days at a time. Diarrhea constantly occurred even in the cat subjected to subcutaneous injections. The urine reduced Fehling in some of the cats, but not in others. The daily records made with the polygraph showed that the pulse-rate steadily increased. The highest was 384. The heart's impulse appeared to be diffused over a larger area of the thorax than previously. The rates steadily diminished in the two cats in which the thyroid feeding was stopped. There was no prominence of the eye that could be compared to that seen in exophthalmic goiter. The cats became tremulous, and the hair could be seen to shake, but it was quite impossible to differentiate this from the effects of the general weakness and rapidity of the heart's action. It cannot be compared to the tremor of exophthalmic goiter. The cats during the experiments became quite tame, and purred on being handled; in the later stages they appeared to start at a sudden noise.

At the necropsy there was almost entire absence of fat; the muscles were extremely wasted. The intestinal mucous membrane showed hemorrhagic changes, but not invariably. The intestinal contents were conspicuous by the absence of worms, which are generally present in large numbers in normal cats. The mesenteric lymph-nodes were sometimes enlarged, but not more so than is commonly seen in cats, so that no comparison can be made with the lymphoid changes seen in exophthalmic goiter.

Nineteen rabbits were fed on thyroid in milk in doses varying from 0.2 to 1 gram daily. They rapidly lost weight and died, except five in which the experiments were not pushed to their termination. Death occurred from the fifth to the nineteenth day with one exception; this one survived twenty-eight days. The fur became unkempt and fell out. The loss of weight varied from 19 to 42 per cent. of their total body weight. The appetite was much increased, and they ate ravenously right up to the time of their death. Diarrhea was a constant symptom, but no salivation was noted. The urine was not tested or estimated. The pulse-rate steadily increased, the highest recorded being 420 per minute. No exophthalmos or constant alteration in the nictitating membrane was noticed. The rabbits became weak and tremulous, but no comparison can be made between this and the tremor of exophthalmic goiter. Three of the five rabbits in which the experiment was not pushed to a termination died suddenly while being given ether as an anesthetic.

Fifteen guinea-pigs were fed on thyroid daily, from 0.2 to 0.6 gram. The fur changes, loss of weight, diarrhea and increased appetite that occurred agreed with the changes seen in the rabbit; the naked eye pathology was also similar.

Twelve dormice were fed on 0.025 gram of thyroid a day, twelve others were used as controls. Beyond falling out of the fur, diarrhea and loss of weight, no changes were to be noted. They died in four to nine days, having lost 13 to 38 per cent. of their weight. The thymus was found diminished; in some at the time of death it was quite small, and no fat was to be seen in it, while others died before all the fat had disappeared.

The cats proved the most resistant, the other three were very susceptible; the rabbits lived longer than the guinea-pigs; this one would expect from their size. The cardinal symptoms in all were fur changes, loss of weight, weakness, increased appetite and diarrhea. Tachycardia was well marked in the cats and rabbits, but no reliable observations could be made in either the guinea-pigs or the dormice, owing to the difficulties involved in their small size.

### Lancet, London

*November 22, II, No. 4708, pp. 1448-1516*

14 Origin and Growth of Royal College of Surgeons of England. R. J. Godlee.
15 *Some Requirements for Modern Clinical Teaching. D. Duckworth.
16 Treatment of Neurasthenia. J. S. R. Russell.
17 *Four Cases of Ureteral Calculus. H. Collinson.
18 *Primary Cause of Rheumatoid Arthritis. H. W. Crowe.
19 Case of Tumor of Pituitary Body. A. L. Taylor.

15. **Requirements for Clinical Teaching.**—A clinical teacher, says Duckworth, has great responsibilities. Before all things he must be human and sympathetic, never forgetting that he is dealing with patients who have souls as well as bodies, and not with mere "cases." He has to illustrate and teach good manners as well as medicine. He must believe in his art, for a sceptic in therapeutics can teach nothing. He should not pursue many novelties, for in Duckworth's experience novelty-hunters have not been well instructed in the principles of medicine in their early career. To these requirements Duckworth adds a large measure of tact and common sense, no small amount of geniality and humility, and a due degree of such dignity as rightly belongs to men charged with serious duties to their country and their fellow creatures.

17. **Four Cases of Ureteral Calculus.**—The cases cited by Collinson are as follows: 1. Calculus impacted in the upper end of the ureter; calculous anuria; nephrotomy. 2. Calculous cast occupying the whole length of the ureter; nephrectomy and ureterectomy. 3. Calculus impacted in the iliac portion of the ureter. 4. Calculus impacted in the juxtavesical portion of the ureter; retroperitoneal ureterotomy.

18. **Primary Cause of Rheumatoid Arthritis.**—Crowe describes rheumatoid arthritis as a disease caused primarily by a common inhabitant of the skin, the *Micrococcus epidermidis*, variety deformans, or more shortly, the *Micrococcus deformans*, and suggests that the germ produces the disorder mainly by its action on some portion of the nervous system, and that other pathogenic germs are frequently actively engaged as a secondary mixed infection.

In 26 cases of typical rheumatoid arthritis the organism was present in all. It was cultured in 22 and positive complement-fixation was demonstrated in the remaining 4. In a further 14 less severe and doubtful cases of rheumatoid arthritis, the organism occurred in 11, being cultured from 9. If neuritis is included the total number of cases becomes 48, and the incidence 45—that is to say, 93.75 per cent. Streptococci were present in addition to the *M. deformans* in 21 cases and *B. coli* in 7. Crowe has found the *M. deformans* in the urine in two or three cases of mild septicemia, occasionally in neurasthenia, and also in rheumatism; among 35 of such cases recently investigated it has appeared 13 times.

### Annales de Mêdecine et Chirurgie Infantiles, Paris

*November 15, XVII, No. 22, pp. 741-776*

20 *Obesity in Children. (Le syndrome adiposo-génital de l'enfant.) G. Mouriquand. Commenced in No. 21. (Les obésités glandulaires de l'enfant.) M. Nathan.

20. Summarized in the Paris letter, November 8, p. 1730.

### Bulletin de l'Académie de Médecine, Paris

*November 4, LXXVII, No. 34, pp. 325-346*

21 Electric Tests of the Internal Ear. (Désorientation et déséquilibration provoqués par le courant voltaique.) J. Babinski
22 *Action of Salt, Etc., on Calomel. (Etude expérimentale de l'action des chlorures alcalins sur le calomel, in vitro et dans le tube digestif.) G. Patein.

22. Summarized in the Paris letter, November 29, p. 1995.

### Presse Médicale, Paris

*November 8, XXI, No. 91, pp. 905-916*

23 *Cure of Experimental Tetanus in Guinea-Pigs. M. A. Ruffer and M. Crendiropoulo.
24 Conditional Reflexes. (Les réflexes associatifs.) I. Duscian.

*November 12, No. 92, pp. 917-928*

25 Intestinal Bacteria and Auto-Intoxication. H. Roger.
26 *Local Prophylactic Treatment of Furunculosis. P. Gallois.

23. **Cure of Experimental Tetanus.**—Ruffer and Crendiropoulo started a series of experiments to determine the reason why certain serums and antitoxins, while having a preventive action against the microbe in question, have no therapeutic action after symptoms due to the microbe have developed. They are experimenting with tetanus germs and serum and their work to date has already demonstrated, they say, that different substances develop in the muscles of tetanized animals some of which favor the effects of the tetanus toxin while others check the toxic action. Antitetanus serum is

incomplete; it lacks something to render it truly effectual and this lacking substance, they assert, can be procured from the muscles of tetanized animals. Guinea-pigs treated on this principle recovered from the experimental tetanus.

26. **Prophylactic Treatment of Furunculosis.**—Gallois denounces the use of water when there are pimples and boils, saying that moist dressings maintain and perpetuate the infectious process. He scrubs the region with soap as this has an antiseptic action while it removes the old epidermis in which germs are lurking, and opens up the clogged outlets to the glands in the skin. Then he rinses the region with an antiseptic, phenol 1 to 40, or hydrogen dioxid, and with blunt scissors snips the top of all the pustules and pimples and cauterizes the bottom of the little ulcer with a mixture of 2 gm. metallic iodin in 5 gm. acetone, applied on a toothpick swab. He is very careful not to squeeze any pimples or pustule, and he never lets his fingers touch the skin or, if he does, he sterilizes them anew before proceeding. He uses a square of lint or cotton to cover the region, spreading first on the cotton a thick layer of glycerite of starch with 10 per cent. boric acid. The dressing is renewed once or twice a day. The glycerin dehydrates the region and is thus practically a dry dressing. With this treatment the tendency to formation of furuncles dies out and by the end of a week or two the cure is complete. The last stage of the treatment consists in dusting the region with a dry powder, 20 parts talcum with 2 parts each of bismuth and paraffin; the latter makes the powder stick to the skin better. The patient is warned not to wear the clothes he wore before the treatment began, and the edges of collars, etc., are softened to prevent irritation of the skin liable to bring on new trouble. The treatment is thus a series of minute precautions bearing all toward the same goal—to prevent reinfection. Gallois insists on applying the dressing himself each time. Vaccination and internal measures may be useful, but they must not divert the attention from the main point in treatment, the local prophylaxis.

## Revue de Gynécologie, Paris

*November, XXI, No. 5, pp. 353-448*

27 The Transverse Abdominal Incision in Gynecology. O. J. Rapin.
28 *Treatment of Retrodisplacement of Uterus by Transplanting the Round Ligaments. J. M. Caballero.

28. **Treatment of Retrodisplacement of the Uterus.**—The tip of the kinked round ligament is sutured to the fascia of the rectus after being brought up through a tunnel parallel with the farther end of each tube. By this means the ligaments form a long flat ellipse instead of the narrow triangle of other technics. Caballero has applied this technic in 350 cases and extols its numerous advantages. The uterus is left freely movable and there is no disturbance with a later pregnancy. The direction of the uterus in respect to the axis of the pelvis is not altered.

## Semaine Médicale, Paris

*November 12, XXXIII, No. 46, pp. 541-552*

29 *Spasmodic Contraction of the Stomach. (Le gastrospasme.) L. Cheinisse.

*November 19, No. 47, pp. 553-564*

30 *Living Craniopagus. (Emi-Lisa Stoll.) M. Baudouin.

29. **Spasmodic Contraction of the Stomach.**—Cheinisse concludes his study of gastrospasm with the statement that atropin aids in differentiation; roentgenoscopy shows the spasm relaxing under the influence of the drug while the nausea and vomiting subside. It is useful consequently in treatment, and Cheinisse has found its action enhanced by giving cannabis indica with it. The cause should be treated, of course, trying to cure the neurasthenia or other nervous affection responsible for the gastrospasm. If tobacco has to be given up, the weaning should be gradual. Waldvogel has reported a case in which on the sudden dropping of tobacco the gastrospasm was succeeded by atony of the stomach with much residue, and the condition persisted for several weeks.

30. **Living Craniopagus.**—Baudouin describes with an illustration a craniopagus twenty months old when exhibited at Ghent last summer. The twins are normally formed except where they are joined by the skull, the parietal bones blending together. An interesting feature of the case is the angle of 90 degrees at which the planes of the heads are turned. The brains seem to be distinct, as one of the twins can sleep while the other is awake. As invariably occurs with double monsters of this kind, Baudouin remarks, the twins are of the same sex and the color of eyes, hair, shape of ears, etc., are the same in each; they are not two beings but halves of one. He has found seven cases on record of a craniopagus surviving for a few days. Five date from 1703 to 1861. The others are L. Blanc's case (1893), girls, who survived for five months, and Kissinger's case (1908), boys, who died the sixth day after birth.

No attempt at operating on a craniopagus is on record, but Munster's (1495) famous metopagus (joined at the forehead) lived to be 10 years old, when one of the girls died and the other did not long survive the separation. Baudouin emphasizes the necessity for operating before the death of either child. This is the capital condition for success, and the Stoll craniopagus should be operated on before the legs become atrophied from lack of use. The law in France forbids a surgeon, however willing to pay the subject, from even proposing any operation whatever for the simple purpose of promoting the progress of operative science.

## Beiträge zur Klinik der Tuberkulose, Würzburg

*XXVIII, No. 3, pp. 351-512. Last indexed, Nov. 8, p. 1755*

31 *Rare Forms of Tuberculosis. (Die menschliche Tuberkulose in ihren selteneren Erscheinungsarten.) G. Goerdeler.
32 Diagnostic Importance of Inoculation of Animals with Pleuritic Effusion. F. Japhé.
33 *Air Embolism in the Eye. (Luftembolie im Auge.) Stargardt.
34 *Abderhalden's Serodiagnosis in Tuberculosis. (Untersuchungen mit dem Abderhaldenschen Dialysierverfahren bei Tuberkulösen.) F. Jessen.

31. **Rare Forms of Tuberculosis.**—Goerdeler reports seventy-two cases or necropsies showing a tuberculous affection in some unusual location, as he describes in detail in this article of 114 pages. In nine cases the lesion was in the lower or middle lobe of the lung in persons between 60 and 80 and in one infant. He has found only one case on record of a similar atypical tuberculous lesion in an infant's lung. In two other cases the tuberculous process was located in the gums; in five in the esophagus. Another patient was a boy with a tuberculous abscess in the parotid gland. In another case a woman of 29 had a lupus carcinoma in the right cheek and tuberculous tissue was found adjoining it. The cadaver of a man of 56 showed a perforated gastric ulcer with healed lesions in the lung. Among the 4,620 cadavers, tuberculous gastric ulceration was found in only two other cases and in both it was evidently secondary to pulmonary lesions. In only six cases in his total material was a primary intestinal tuberculous lesion discovered.

The liver was the seat of the tuberculous process in three cases; in one this was apparently the primary process. A tuberculous abscess was found in both liver and pancreas in another case, the patient a man of 74. There were no striking symptoms in this case and no fever, all the liver cases showing that tuberculous processes in this organ may develop without characteristic symptoms. In three cases the male urogenital apparatus seemed to be primarily affected, no older lesion being discovered at necropsy. The uterus was the seat of an isolated tuberculous process in a woman of 68; the symptoms suggested cancer. He encountered only one other case of primary tuberculosis of the uterus; the tubes are generally affected first. In the group of thirteen cases of tuberculous processes in the serous membranes, the patients were nearly all elderly; the possibility of a tuberculous affection should be borne in mind in case of effusion in a cavity in the elderly. An abnormal temperature curve should suggest that the disturbances cannot be ascribed to mere senile insufficiency of the cardiovascular apparatus. The adrenals were the seat of a tuberculous process in three cases, and none of them showed any signs of changes in the skin and mucosa suggesting Addison's disease, confirming anew the looseness of the connection between this and adrenal tuberculosis.

The thyroid was the seat of the tuberculous process in one case; the gland increased rapidly in size. suggesting malignant struma. The patient was a well-nourished woman of 42 and the thyroid was removed, the patient dying the next day. The first symptoms had been observed five months before, but the woman had kept at work until three days before the operation. Necropsy was not permitted. The spinal dura was the seat of a circumscribed tuberculous process found at necropsy of a man of 66. Nothing in the clinical course had suggested the true nature of the disturbances noted; they consisted merely of atrophy of the muscles in the legs, some disturbance in micturition and defecation, and in the gait. The temperature had shown slight evening rises for a few weeks, which should have suggested a possible tuberculous process. A connection between trauma and tuberculosis was evident in a few cases of a tuberculous process in bone or muscle in elderly men or women. Goerdeler calls attention to the fact that in these seventy-two cases of atypical localizations of tuberculosis all but four were in adults, and in over half the cases in persons over 60. With isolated tuberculosis of lymph-nodes, cancer had accompanied or preceded it in six cases. One lesson taught from the experiences reported is the diagnostic importance of even a slight rise in temperature, especially at evening. The various modes of spread of the infection are discussed and a few pages of bibliography appended.

33. **Air Embolism in the Eye.**—Stargardt induced air embolism in rabbits and monkeys and found that the fundus of the eye showed the presence of air in the artery almost at once. The characteristic findings are described. and examination of the fundus is suggested as a means for differentiating air embolism in puzzling cases of collapse.

34. **The Abderhalden Serum Test in Tuberculosis.**—Jessen states that the dialysis method of Abderhalden is uncommonly instructive in tuberculosis. not only differentiating the tuberculosis but pointing out the special organ involved. He tabulates the findings in 381 applications of the test.

### Berliner klinische Wochenschrift

*November 10, L, No. 45, pp. 2073-2120*

35 *Friedmann's Method of Treating Tuberculosis. (Ueber das Dr. F. F. Friedmann'sche Heil- und Schutzmittel zur Behandlung der Tuberkulose und Scrofulose.) C. L. Schleich and others.
36 *Vaccination against Chicken-Pox. (Schutzimpfung gegen Varicellen.) C. A. Kling.
37 *Action of Hypophysis Extract on the Kidneys. (Nierenwirkung von Hypophysenextrakten beim Menschen.) R. von den Velden.
38 *Vaginal Versus Abdominal Hysterectomy for Uterine Cancer. D. v. Ott.
39 *Diseases Accompanied by Exaggerated Hemolysis. (Pigmentcirrhose; Milzexstirpation bei perniciös-hämolytischer Anämie.) M. Mosse.
40 Operations on Thoracic Esophagus. E. Unger.
41 Technic for Intubation with Meltzer's Insufflation Anesthesia. A. Lautenschläger.
42 Artificial Respiration during Operations in the Thorax. (Künstliche Atmung bei intrathorakalen Eingriffen.) Gelinsky.
43 Production of Radio-Activity by Non-Radio-Active Elements. H. M. Levy-Dorn.

35. **The Friedmann Method.**—[This article consists of clinical talks delivered at a meeting in the auditorium of the Second Medical Clinic in Berlin on Oct. 26. 1913, for the demonstration of results obtained with the Friedmann tuberculosis remedy. It will be noted that this was a Friedmann meeting. at which there was no critical discussion and no representation of opposing views ]

Schleich gives Friedmann the credit for discovering a harmless and not infective form of the tubercle bacillus which is derived from the turtle and is said to have a curative action against human tuberculosis. Living bacilli are injected, producing at the point of injection an infiltration which is assumed to be a depot from which antigens are slowly supplied to the circulation. In certain cases the living bacilli are injected intravenously directly into the blood. Schleich presented ten cases of surgical tuberculosis and two of pulmonary tuberculosis which had improved greatly under the treatment. Two were cases of tuberculous testicle. one of which Professor Moeller is said to have declared could not be cured by tuberculin. He showed one case of florid phthisis together with suppurating cervical glands and an affection of the hip in which complete recovery had taken place. This patient had been treated for four years, showing the complete harmlessness of the remedy. The other cases were mostly examples of healed tuberculosis of the joints and bones in which the Friedmann remedy had been used.

Two cases of pulmonary tuberculosis were presented. The condition of the first on admission was shown by a roentgenogram, indicating. according to Schleich's interpretation, a complete destruction of one lung and extensive infiltration of the other. The patient was present in person and Schleich stated that she was really much better. The second patient was allowed to tell his own story. He reported remarkable improvement in spite of the extremely unfavorable prognosis which had been made by the physician who had treated him.

E. Müller presented eighteen cases selected so as to show the action of the remedy best. He is not inclined to modify the favorable opinion which he expressed in November, 1912. If the indications given by Friedmann are strictly adhered to, the remedy, in his opinion, will be found to be not only harmless, but very beneficial.

H. Thalheim summarized his experience in the following propositions: 1. Under all circumstances I secure with Friedmann's remedy a cessation of the toxic activity of the bacilli and of the specific symptoms. 2. I secure an early improvement in objective signs, especially an abatement of the râles, while the bronchitic and peribronchitic symptoms may not cease, as generally all cicatricial processes which pertain to healing even in favorable cases cause the persistence of auscultatory and percussory signs. 3. I secure a complete transformation of the constitution in the sense of full immunity, i. e., a restoration of the ability to work and complete feeling of health, such as no treatment hitherto has so permanently and so surely produced. 4. Previous treatment with tuberculin in many cases renders a cure more difficult. 5. Under all circumstances I regard increase of weight (without extra feeding), a permanent subjective feeling of well-being and ability to work as of more importance than the remains of a previously active focus as determined by auscultation and percussion.

Thalheim lays special stress on the importance of not making a second injection until the infiltration produced by the first has disappeared. He reports seventeen cases.

Immelmann discussed the evidence of tuberculosis of bones and of the lungs given by the x-ray plate, and showed what he believed to be evidences of improvement in the cases treated by Friedmann's remedy.

F. Kraus remarked that the clinic was acting in the capacity of a neutral host and had no patients to show, as those who had been treated by the remedy were not yet ready for conclusions to be drawn. He referred to one case which had been presented and which he had regarded as affording no prospect of success for the Friedmann remedy. The improvement he regarded as surprising, even when it was admitted that the patient was a very impressionable man. (The patient was the one that Schleich allowed to tell his own history.)

While admitting that these results may be obtained by other methods. Kraus believes that the method gives results better than he has seen obtained by tuberculin. and he regards it as preferable on account of its simplicity. He recommends that it be tested at leisure without prejudice.

36. **Vaccination against Varicella.**—Kling protests against the assumption that chicken-pox is always a harmless disease. When it runs through an institution with many small children, it is liable to develop into a malignant form. It may leave disfiguring scars and sepsis or erysipelas may originate in the pustules, while instances are known of consecutive pneumonia, nephritis, gangrene of the skin and other complications. At the Stockholm Children's Hospital an epidemic of varicella developed last August; forty-four patients were affected and in order to save the rest he inoculated the other

infants with serum from a pustule. A positive response was obtained in fifty-eight of the children and the virus could be cultivated through six generations. Only one of the thirty-one vaccinated infants in two wards developed the disease, and it ran an unusually mild course, while over two-thirds of the non-vaccinated had typical varicella. There are 200 children in all the wards of the institution. The response to the vaccination was slight and exclusively local. A number of the children giving a positive reaction had been vaccinated against small-pox up to a few months before. The typical reaction to both seems to sustain the assumption of the essential difference between variola and varicella.

37. **Action of Hypophysis Extracts on the Kidneys.**—The experimental and clinical research reported by von den Velden shows that extracts of the pituitary body depress kidney functioning. This effect warns of the necessity for caution with this form of organotherapy. It also explains the benefit from it in diabetes insipidus.

38. See abstract 57 in The Journal, 1913, lxi, 1752.

39. **Splenectomy in Pernicious Anemia.**—Mosse adds another case to Eppinger's in which the clinical picture of pernicious anemia was transformed by removal of the spleen. (See The Journal, Oct. 4, 1913, p. 1333; Nov. 15, p. 1816, and Dec. 6, p. 2087.) Of course this treatment is applicable only in cases of pernicious anemia with much hemolysis. The extent of the blood destruction can generally be determined by testing the resisting power of the red corpuscles to salt solution and to the patient's serum and alien serum. Mosse's patient was a woman of 38 and the great benefit following splenectomy has persisted unmodified to date.

### Deutsches Archiv für klinische Medizin

*CXII, Nos. 3-4, pp. 209-402. Last indexed Nov. 15, p. 1851*

44 *Blood-Pressure in Alcoholism and Functional Neuroses Free from Circulatory Disturbance. K. Raff.
45 Chemistry of the Sputum. E. Maliwa.
46 *Effect of Pathologic Serums and the Serum of Pregnancy on Autolysis. (Ueber Förderung autolytischer Enzymwirkung durch pathologisches und Schwangerschaftsserum.) H. Guggenheimer.
47 Pathologic Anatomy of the Heart in Permanent Arhythmia. V. Berger.
48 The Electrocardiagram in Permanent Arhythmia. K. Fahrenkamp.
49 *Retention of Chlorin. B. Scholz and A. Hinkel.
50 Case of Traumatic Thrombosis. S. Daus.
51 No constant Relation between Deficiency in Hydrochloric Acid and Excessive Splitting of the Albumin Molecule. (Ist bei Salzsäuredefizit das Eiweiss bes. weitgehend aufgespalten?) L. Pel.
52 *Salkowski-Kojo's Colloidal Nitrogen in the Urine in Diagnosis. G. Lehmann.

44. **Blood-Pressure in Alcoholism, Etc.**—The tests were made in chronic alcoholics with normal heart and kidneys after abstinence had been enforced in the hospital. There was a marked rise in the systolic pressure for a few days, with a gradual fall. The diastolic pressure was constantly high throughout the whole period, so that the increased pulse pressure was caused only by the rise in the diastolic pressure. This peculiarity in the blood-pressure curve is so constant that it could be used in doubtful cases for diagnostic purposes. In functional neuroses the curves were variable and less characteristic.

46. **Effect on Autolysis of Various Pathologic Sera.**—A series of experiments was undertaken to determine the effect of serum in different diseases on autolysis in various organs. The serums from patients with parasyphilitic disease had no appreciable effect on human brain tissue; on the other hand, the serum from patients in certain stages of pneumonia and serum from uremic patients decidedly increased autolysis. Autolysis of rabbit liver was increased by serum from pneumonia, uremia, chronic nephritis, Basedow's disease, the absorption stage of serous joint effusions, diabetic coma and beginning delirium tremens. This effect was not constant, however. It seems that it can be hindered under certain circumstances by anti-autolytic substances in the serum.

This increase in autolysis cannot be attributed either to a decrease in alkalinity of the blood or to drugs, nor to a decrease of the complement or antibodies in the blood. The substances in the serum responsible for it are called auxo-autolytic bodies. They are probably of the nature of ferments. If this proves to be the case, we will thereby have a new and more delicate method of demonstrating proteolytic ferments in the blood-serum. The presence of these auxo-autolytic substances in human serum also confirms the assumption that autolytic processes are going on in the body during life. Differences were noted in the effect of the same serum on the autolytic enzymes of different organs, confirming the specific nature of the autolytic enzymes involved. Serum from pregnant women decreased autolysis of rabbit liver but hastened the autolysis in placental tissue. Other normal and pathologic serums were neutral in regard to placental tissue, while inhibiting autolysis in rabbits' livers. No normal or pathologic serum was found that increased autolysis in tumors.

49. **Retention of Chlorids.**—Scholz and Hinkel find that the question of chlorid retention is much more complicated than has hitherto been supposed. Many other conditions besides nephritis influence retention of chlorids, such as congestion, disturbances of nutrition, anemia and cancer. Therefore high chlorid content of the blood should not be attributed to kidney insufficiency until these other possible factors are excluded. They regard the skin as the main storehouse for the chlorids in the body; after this come in turn the intestines, the liver and the lungs.

52. **Determination of Colloidal Nitrogen in Diagnosis.**—Lehmann found that Kojo-Salkowski's quotient, which is assumed to represent the relation of the colloidal nitrogen to the total nitrogen of the urine, is often increased in carcinoma and tuberculosis. The quotient is markedly influenced by diet. With cancer, for instance, by giving a diet poor in purins, the quotient may be decidedly decreased. On the other hand, by giving normal individuals an excess of purin bodies the quotient may be made as high as with cancer. In using it for diagnostic purposes, therefore, the diet must be carefully controlled. (The test was discussed editorially in The Journal, Sept. 6, 1913, p. 778.)

### Deutsche medizinische Wochenschrift, Berlin

*November 13, XXXIX, No. 46, pp. 2233-2280*

53 *Treatment of Falling Out of the Hair, Hair Anomalies and Excessive Growth of the Hair. (Aerztliche Kosmetik der Haut. IV.) E. Kromayer.
54 Echinococcus Disease of the Lungs. E. Behrenroth.
55 Roentgen Diagnosis of Stenosis of Bronchus. J. Ziegler.
56 The Protecting Antibody Ferments. (Zur Abwehrfermenttheorie.) Rollmann.
57 *Cardiospasm and Hypnosis. L. v. Szöllösy.
58 Dangers of Transfusion and Means to Avoid Them. R. Ottenberg and D. J. Kaliski (New York). See p. 2138.
59 Abortive Treatment of Syphilis. W. Lier.
60 Retrograde Incarceration of the Intestine. W. Merkens.
61 Improved Stain for Blood and Tissues. (Einfache Methode der panoptischen Blut- und Gewebsfärbung mit "Polychrom.") S. Klein.

53. **Care of the Hair and Its Diseases.**—Kromayer reiterates that any means to stimulate the functioning of the hair papilla tends to prevent the dropping out of the hair and promote the production of new hairs. For alopecia areata the best local application seems to be a 1 to 4 per cent. alcoholic solution of mercuric chlorid with which the bald spots are dabbed morning and night. If redness and pain are induced, the application is suspended until this subsides. He regards radiotherapy, however, as far superior to any medicinal applications. The quartz lamp can be applied to induce with the white light an intense inflammation over the bald spot; this is then healed with salves and the application is repeated once. Or the milder blue light can be used daily to keep up a very mild congestion and inflammation. Both forms of radiotherapy with the quartz lamp are very effectual, he says. In not a few cases the hairs began to sprout in a few days after the white light application and by the end of a few weeks there was a normal growth of hair.

Alopecia pityroides is the result of chronic inflammation of the scalp, causing itching and patches of redness and dandruff. The hairs grow fast under this stimulus but gradually the papilla becomes destroyed and permanent baldness results. The baldness thus induced is irreparable but the cure of the causal inflammation and prevention of the inflammation are important and practicable. The scalp needs light and air to be healthy; the constant wearing of hats and caps, and living in close rooms reduce the resisting power of the region while the accumulation of dust, sweat and sebum provides food for micro-organisms. He insists that the scalp should be cleansed much more regularly than is generally done. Men should shampoo their heads with a non-irritating soap two or three times a week and then apply a 5 per cent. petrolatum solution in ether, rubbing in fifteen or twenty drops on a wad of cotton. For women he advises the use of what he calls the hair *Glittel*, a kind of narrow toothbrush only it has a pad of wool in the place of bristles. A weaker solution of the petrolatum can be used or a mild shampoo, afterward replacing the fat lost in the shampooing. The ends of the hairs suffer most from the loss of fat, and consequently he advises women to tie up the long ends of their hair in three or four rubber tissue bags when the scalp is shampooed. He remarks in conclusion that a convenient method has not yet been discovered for removal of superfluous hairs. Even when five needles are inserted at once for electrolysis it takes a great deal of time and there is liable to be recurrence over more or less of the area in the course of a few months in persons with a tendency to much growth of hair.

57. **Cardiospasm and Hypnosis.**—Szöllösy's patient was a woman of 36, otherwise healthy, and in good circumstances. She had suffered for two years from cardiospasm absolutely rebellious to all medical measures. Asthma developed also and the woman became much emaciated from inability to have the food pass regularly into the stomach, but there were no symptoms of hysteria. An operation confirmed the lack of organic trouble. Atropin gave relief for a few hours at first but the patient gradually became accustomed to it and no further effect was apparent. As a last resort hypnosis was tried, and for five weeks during the hypnosis treatment and for a month afterward there was no further disturbance from the neurosis. Then the symptoms returned again the same as before, persisting until permanent relief was obtained by an operation nearly three years after the first signs of trouble.

### Medizinische Klinik, Berlin

*November 9, IX, No. 45, pp. 1837-1878*

62 *Evacuation of Pleural Effusion with Inlet of Air. A. Schmidt.
63 *Syphilitic Lesions in Internal Organs. Lenzmann.
64 Autoserotherapy and Autohemotherapy. (Methode und Wirkung der Eigenserum- und Eigenblutbehandlung nebst Bemerkungen zur Umstimmung der Hautreaktion durch Eigenstoff- und Natrium-nuclein-Injektionen.) B. Spiethoff.
65 *Botulismus; Twelve Cases with Five Deaths. L. Bürger.
66 Serodiagnosis in Progressive Paralysis. M. Theobald.
67 Scaphoid Scapula. F. Warburg.
68 Materia Medica Includes Materia Dietetica as well as Materia Pharmacologica. (Diätetik im ärztlichen Unterricht.) C. Jürgensen.
69 Early Diagnosis of Cancer. C. S. Engel.
70 Petroleum in Treatment of Digestive Disturbances. (Anwendung von Erdöl—Angiers Emulsion—bei Verdauungskrankheiten.) L. Metzger.
71 The Wassermann Reaction. (Zur Frage des verfeinerten Wassermann mit bes. Berücksichtigung der sogenannten paradoxen Sera.) F. Graetz.

62. **Outlet of Pleural Effusion with Inlet of Air.**—Schmidt is not convinced of the therapeutic advantages of letting air into the pleura in pleurisy, although he has seen some surprising benefit follow this in occasional instances; but if it is to be done the technic he describes places it within the reach of every one and absolutely free from drawbacks of any kind. It is important to drain away the effusion to the last traces, and this is accomplished in the simplest and most thorough manner by having the patient lie on his side across a narrow space between two beds. The puncture is made at the lowest point with a simple, not too thick, two-way trocar. Removing the guide starts the flow, and as air enters at the same time no aspiration is necessary and there is no need to measure the amount of air; only just enough enters to take the place of the emerging fluid. The conditions in regard to pressure between the outer air and the air in the chest adjust themselves automatically. He has determined with the Roentgen rays that with this technic the fluid drains away to the last drop and no more air enters than takes the place of the fluid. He describes two cases in detail with the Roentgen findings before and after to sustain his assertions.

63. **Syphilitic Disease in Internal Organs.**—Lenzmann's experience teaches that the absence of signs of syphilis by no means excludes the possibility of a syphilitic origin for disturbances observed. The sad "too late" is particularly tragic here as proper treatment in time might have warded them off. He opens the list with two cases of what was apparently cancer of the liver in women nearly 60, free from any suspicion of syphilis, but with cachexia, pallor, emaciation and the liver extending two or three inches below the costal arch, hard and knobby, painful on pressure, but not otherwise, since the first beginning of trouble six months before. Both women had healthy children but each had had two abortions years before. The Wassermann was found positive and under treatment for syphilis a complete clinical cure was realized in a few weeks in both cases. In contrast to these, in a third case, in a known syphilitic woman, an affection of the liver developed which was not influenced by treatment and necropsy showed cancer. The whites numbered 20,150 in this case while in the two others in which the syphilis was responsible for the trouble, the whites numbered about 7,200. Loss of appetite and oppression in the stomach often accompany recent syphilis; there is probably a catarrhal disposition on the part of the gastric mucosa. He has often witnessed later in the course of the disease severe stomach disturbances, vomiting after meals and gastralgia at night, all of which subsided entirely on treatment of the syphilis. This also ocurred in a case suggesting ulcer by the occult bleeding and gastralgia.

One patient with symptoms of obstruction in the intestines for several months finally developed complete ileus and died. Syphilis was not suspected in this case but necropsy revealed gummatous tumors as probably responsible for the entire intestinal trouble. Another patient with signs of syphilis had colics and obstinate diarrhea not influenced by the usual means but subsiding under treatment of the syphilis; the gummatous infiltration of the mucosa had not reached the stage of ulceration. Two other patients had oliguria, high albumin content of the urine, edema, extreme pallor, and they felt very sick, but were restored by treatment for syphilis.

One patient consulted him for obstinate headache and sleeplessness and the urine contained some albumin and casts with a blood-pressure of 150 to 158. These signs of a kidney affection had developed fifteen years after infection with syphilis. Treatment for the syphilis then seemed to arrest the kidney trouble; enough sound kidney tissue was saved so that although there is now, sixteen years later, still 0.5 per thousand albumin in the urine, there are no casts and the patient feels well and strong. In another case with a blood-pressure of 170, normal conditions were restored by specific treatment. Syphilitic disease of the arteries may cause symptoms in time to permit complete retrogression if they are carefully heeded. Sudden loss of consciousness may be the first sign of trouble in the cerebral arteries; he has had three cases of this kind. One was a man of 62 who noticed that he could not rely on his memory and felt depressed; after a few months he suddenly dropped unconscious and lay in this state for three days. The assumption of cerebral apoplexy was disproved by the fact that no paralysis was left from the attack and treatment for the syphilis restored him to apparently complete health as occurred also in two other cases of this kind; the loss of consciousness had lasted only a few hours.

All these experiences emphasize the importance of energetic treatment of the syphilis whenever the Wassermann becomes positive; also that syphilitic patients should be kept under observation for years. He urges the Wassermann test even when there is no history of syphilis but merely headache at night, pain in the heart or other suspicious symptoms. Few syphilitics will take the pains to get cured. They may go to some physician who will reassure them and say "wait for further treatment until you have symptoms." This pleases the patients, and as long as this lack of sense on the part of the public is nourished by the words of certain medical

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# CONTROL OF CANCER*

JOSEPH COLT BLOODGOOD, M.D.
BALTIMORE

We now have evidence to show that the number of cures of cancer can be increased. No one will question that cancer of the lip, tongue, skin, stomach and colon has been cured by radical excision. There was a time in the history of surgery when no such cures had been accomplished. In 1890, Agnew, professor of surgery at the University of Pennsylvania, made the public statement in his surgical clinic that he had never cured a patient of cancer of the breast. Within a few weeks I have seen a patient operated on for cancer of the breast by Dr. Halsted in 1890, who is still living and apparently as free from signs of cancer as a person who had never suffered from that disease.

Agnew, who honestly stated that he had never cured cancer, only removed the breast and never operated, except when the signs of cancer were fully developed. Halsted, in 1890, removed not only the breast, but a wide area of skin, both pectoral muscles and the axillary contents *en bloc*. Halsted also operated the moment he was given the opportunity.

When the first statistical study from the Johns Hopkins Hospital was published, showing 47 per cent. of patients apparently free from cancer three years after operation, most surgeons in this country were skeptical as to the truth of these statistics. Every few years a reinvestigation of the results confirms the original statement.

The number of cures of cancer can be increased by earlier intervention and better surgery. The American Society for the Control of Cancer hopes to bring before the public and the profession the actual percentage of cures of cancer accomplished in the various clinics in this country. In these clinics complete records have been kept; in each case the diagnosis has been checked by competent pathologic examination, and in many instances the original tissues and microscopic sections have been preserved for restudy—therefore, for a confirmation of the original diagnosis.

Many physicans to-day are skeptical as to the permanency of the cure of cancer. They question the pathologic diagnosis in the cases in which the patients have lived ten years or more. In the clinics just referred to, in which the records and the tissues have been preserved, the histologic picture of the tumor in the case of a cure does not differ from the histologic picture of the case or cases in which the patients later died of cancer. When, therefore, we have for every case in which the patient was cured a histologically identical case in which the patient was not cured, it is fair to assume that the patient cured also suffered from cancer.

The majority of people believe that cancer is a "blood disease." By this they express a vague notion of a general disease present in many parts of the body, and for this reason they naturally conclude that its removal from one place will have no effect on the disease in other parts.

The majority of surgeons who operate for cancer do not always tell their patients the nature of the disease, but, whether they do or not, the longer the patient lives in comfort the more skeptical does he or she become as to the grave nature of the original disease. Especially, is this true in cases in which the operation was necessarily mutilating, as in skin-grafting in operations for cancer of the breast, or in resection of the jaw in cancer of the tongue and gum, or in some cases of amputation for carcinoma or sarcoma of the extremities. Again and again, in the course of my investigation of the ultimate results in malignant disease, I have encountered in correspondence and conversation the questions: Was it necessary to do so much? Was the disease really cancer?

In the control of cancer, therefore, we shall have to combat this skepticism both in the ranks of the profession and among the people. We have the evidence that cancer can be cured and we must bring it before the profession and the public in such a way that they will believe it.

The percentage of cures in the fully developed cancer is relatively small. The exact figures differ with the localizations. By fully developed cancer I mean one in which there can be no question as to the histologic evidence of malignancy. In this type, too, cures have been accomplished and, while the percentage of these cures is relatively smaller, the possibility of increasing it is by no means out of the question. There is great difference pathologically and clinically between fully developed cancers. A tumor is clinically malignant, or cancerous, when the examining clinician is able to make the diagnosis of the condition without the aid of the gross appearance of the tumor cut with the knife or a microscope section.

When cancer is clinically malignant the probability of a cure is relatively smaller than when it is only histologically malignant, but has not as yet assumed the clinical picture of cancer. This is well illustrated in cancer of the breast. In the Johns Hopkins Hospital surgical clinic, among those cases in which previous to operation a clinical diagnosis of cancer could not be made, the proportion of cures five years after the radical operation is 80 per cent. In these cases the diagnosis was made at the exploratory incision either from the gross appearance of the tumor after it had been cut into or from the frozen section.

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* An address delivered before the Lehigh Valley Medical Society, June 17, 1913.

In those cases in which the diagnosis of cancer could be made clinically from the retracted nipple or adherent skin, the proportion of cures after five years is about 25 per cent. It is an important thing to state that there is absolutely no difference in the pathology of the clinically malignant cancer of the breast and the cancer which cannot be distinguished clinically from a benign tumor.

We may divide cancer of the breast into different forms of adenocarcinoma, scirrhus and medullary carcinoma and cancer cysts, and in each group we shall find some cases subjected to the complete operation in that early stage in which the diagnosis could be made only at the exploratory incision and some in that later period when malignancy was written on the condition by changes in the skin and nipple. The same differences in the results are seen in the different types of cancer. One cannot tell with the microscope, unless one has a section near the skin or nipple in which the infiltration of the tumor is shown, whether this cancer was clinically malignant or not. It is the same type of cancer, therefore; yet, in one case the patient has eighty chances to only twenty-five in the other. The two are subjected to the same operation by the same operator, yet the probabilities of a cure are influenced chiefly by this fact: When the cancer is clinically malignant the chances of a cure are worst; when it is clinically benign, best. This fact is true of cancer in every localization, and the truth of this statement must be impressed on the entire profession and the people. The old method of waiting for the signs of cancer simply means decreasing the probability of a cure. The same is true of cancer of the lip, the tongue, the skin of the face, body and extremities, the uterus, stomach, colon, etc.. The danger of the length of delay varies with cancers in these different localizations.

We have evidence which suggests that, when the disease is treated before it has become clinically malignant, the number of cures of cancer can be increased far beyond the number of cures already accomplished in cancer.

In every localization in which we encounter cancer, we also meet lesions which, histologically, are not cancer. When these lesions are radically removed we never observe recurrence or death from cancer which could be attributed to the tumor removed. It would hardly be right to call these cases cures of cancer, but, as a matter of fact, the time may come when so many patients present themselves for treatment with tumors or lesions in this stage that we shall at once begin to observe in all clinics a decrease in the numbers of cancer cases. It is possible, therefore, in some localizations of cancer to hope for complete eradication of any uncured cancer. These lesions, which histologically are not cancer and which are curable up to 100 per cent. by radical removal, may be called precancerous.

In external cancer, when the patient is carefully questioned, we can usually obtain a history of the beginning of the disease which later comes under observation as cancer. Among 820 pathologically fully developed cancers of the skin and visible mucous membranes, I was unable to find, in a well-taken history, the absence of a previous defect which might be looked on as a benign precancerous lesion. At present, among 997 epithelial tumors of the skin and visible mucous membranes, 173 have been histologically benign, and there was not a single failure to cure in this latter group. The actual proportion of these lesions has increased from 17 to 39 per cent. in two years. Does this mean that we have actually prevented cancer, or does it simply mean that we have removed warts and benign ulcers which would have disappeared if we had left them alone?

We have not, to-day, the figures to prove that the routine and proper removal of these benign, so-called precancerous lesions will reduce the number of deaths from cancer, but the recent evidence is suggestive. In my investigation of cancers of the skin and mucous membranes the worst results are seen in cancer of the tongue. At present we have records of and tissues from thirteen benign and seventy-one malignant lesions of the tongue. These thirteen benign lesions have all been obtained in the past five years, most of them in the past two years. Until three years ago we had never observed a cancer of the tongue at so early a stage that there was any doubt as to the correct diagnosis, but in the past two years we have had six early cases. Up to the present time we have had about 20 per cent. of cures in cancer of the tongue. The experience of the past two years indicates that the proportion of cures will be increased to 40 per cent. I feel confident that no one should fear cancer of the lip, tongue or skin, if he is only educated to the potential dangers of these precancerous lesions, provided that a person so educated obtains in this stage the advice and treatment of a properly trained surgeon. I also feel confident from my investigation that the number of deaths from cancer of the skin and visible mucous membranes, such as lip, tongue and cheek, will be greatly decreased; more operations will be done for the precancerous lesions with 100 per cent. of cures; more operations will be performed for the histologically fully developed cancer, but in that early stage in which it cannot be diagnosed clinically and in which the probability of a cure, while not 100 per cent., is still best. Fewer operations will be performed for cancer clinically malignant with its relatively low possibility of a cure, and in fewer cases will patients present themselves with inoperable cancer.

In cancer of the stomach, colon, appendix, gall-bladder, pancreas, etc., it is more difficult to demonstrate the precancerous lesion. Is it fair to look on every cured resected ulcer of the stomach as a cured cancer? There is no doubt that the histologically fully developed cancer of the stomach has been cured by pylorectomy. The results have been best when the clinical symptoms have been least and of the shortest duration. When a clinical diagnosis of cancer of the stomach or colon can be made, the probability of a cure is least. Fortunate is the patient with cancer of the stomach or colon whose tumor produces obstruction early, because the symptoms then urge operation. Unfortunate, and, in the majority of cases, doomed, is that patient the symptoms of whose neoplasm are slight.

If it has been difficult to educate people and the profession as to the potential danger of a lump in the breast, small and painless defects of the skin and mucous membranes and irregular bleeding from the uterus, it will be much more difficult to educate them to the significance of abdominal pain, indigestion and changes in the stools. The lump in the breast and the precancerous lesion are usually visible and always palpable, but these abdominal symptoms are vague. Patients suffering with them are impatient even of diagnostic measures. They desire immediate relief by diet or drugs. The control of cancer is therefore a problem of education. Those clinics which have the records, the pathologic proofs, must work up their statistics so that we may increase our evidence in proof of the statement that cancer has been cured. Every cured patient is additional evidence.

These clinics can also furnish evidence of the increased probability of a cure in the early stages of cancer and the absolute certainty of a cure in the precancerous stage.

When patients seek advice in these earlier stages, the best results also depend on good surgery. We must establish in this country, on the available evidence, greater uniformity in the treatment of cancer in the different localizations.

No surgeon to-day should operate on a lump in the breast unless he is prepared for the complete operation for cancer if the tumor should prove malignant after exploration. The object of exploring every lump of the breast immediately is not so much to remove a possible benign tumor as to remove cancer in its most curable stage. No surgeon should remove a lump in the breast for microscopic study, delay a few days or weeks and then perform the complete operation for cancer if the tissues studied microscopically should prove to be malignant, because the patient whose chances to be cured were at least 80 per cent. will by such a procedure be almost doomed to death from cancer. The diagnosis must be made at the exploration of the tumor, and, in cases of doubt, the complete operation for cancer must be done.

No surgeon to-day should remove the breast alone for cancer. A few cures have been accomplished, but not enough to justify the procedure, even in exceptional cases. The mutilation of the most radical operation for cancer of the breast with skin-grafting, if properly performed, is nothing as compared with the possibility of a recurrence when a restricted operation has been performed.

Patients with malignant disease—carcinoma and sarcoma—present themselves for surgical aid in the following groups:

A. Hopeless, inoperable. There is no hope even for the palliation of the symptoms by any operation.

B. Inoperable, hopeless. Attempts to relieve pain and prolong life by some operative procedure.

C. Clinically malignant. Apparently operable, but at the operation the disease is found to have extended beyond possible removal with the knife or cautery.

These three groups—A, B and C—really represent inoperable cancer, and up to the present time have been incurable. I shall not discuss here the rare cases of spontaneous cures, the now and then apparently accomplished cures with radium and the Roentgen rays and the apparent cures of inoperable sarcoma with the toxins of prodigiosus and streptococcus.

For these miserable patients everything should be done; every method of treatment should be attempted. No surgeon or physician should allow skepticism to stay his hand or dampen his enthusiasm in attempting to help them. Admitting that there have been some few cures, admitting that there may be more, the percentage will be so small that no one with the knowledge of the true facts would delay to take his gambler's chances with treatment in this late and practically hopeless stage.

We do not often hear these hopeless groups mentioned except in statistical articles and larger monographs. Few physicians and surgeons and fewer of the people realize that in cancer in every possible localization the number of patients in these hopeless groups varies from 25 to 50 per cent.

In external cancer this hopeless condition is due to delay on the part of the patient from ignorance or fear. It is often due to procrastination (probably based on ignorance) of physicians consulted in the early stage. The hopelessness of delay in this group has often been increased by improper intervention, often early and in the most favorable time. The intervention is of various types—incomplete excision by those not trained in surgery; the cutting out of pieces for diagnosis; application of caustics of every type by those of our own guild (I trust, only by those ignorant of the danger) or by quacks, and with Roentgen rays and radium by enthusiasts.

It is to be remembered and emphasized that the treatment received by these patients is, as a rule, instituted in an early period, when experience shows that the best assurance of a cure is the radical cutting out of the disease with a knife in conjunction with, in some cases, the electric cautery. It should not be difficult almost to eliminate these hopeless groups of external cancer.

The clinical symptoms of a cancer of the uterus are so distinct that it should not be difficult to educate the patients and the profession, but unfortunately, even at present, the percentage of patients with cancer of the uterus seeking expert surgical advice in the inoperable group is still large. Thus far our educational efforts have not produced satisfactory results. We trust that later figures will be more encouraging.

In cancer of the stomach, gall-bladder, pancreas, colon, etc., in what we might call internal cancer, the educational problem is a much more difficult one. The beginnings of these malignant diseases are often insidious and slow, and the symptoms are not sufficiently distressing for the patient to be willing to undergo an operation for their relief.

We have trained ourselves to remove the appendix when the patient is suffering no discomfort at all and often when the attacks have been insignificant. We do not always remove the appendix, therefore, to relieve the patient of suffering, but often only to protect him from death from peritonitis. The inoperable groups of internal cancer will remain large until we have educated ourselves and others to understand that the object of exploratory laparotomy in a large number of cases is not so much the relief of symptoms as the protection of the patient from death from cancer.

William Mayo has recently shown that the largest number of patients with cancer of the stomach tell their physicians of symptoms from which they have suffered for from one to three years and longer, and which may be described as ulcer symptoms. Now, as a matter of fact, most people prefer ulcer symptoms to surgery of the stomach. Unfortunately, there is a difference of opinion as to ulcer symptoms and what they mean.

Surgeons whose aid is sought as a last resort feel from the evidence open to them that ulcer symptoms should be looked on as a distinct warning. The object of surgical intervention, then, is just as much for the protection from death from cancer as for the relief of the symptoms. In the early stage of ulcer symptoms the chances of curing cancer are the best.

We have the same available evidence for all forms of internal cancer, but at present there is no uniformity of views among the profession in regard to earlier intervention. The American Society for the Control of Cancer can be most helpful if it is able to collect the evidence which will absolutely prove to, and completely persuade, the large majority of the profession that laparotomy for minimum symptoms, or ulcer symptoms, has for its chief object the cure of cancer. This cure is accomplished either by removing the benign lesion which later might become cancer, or the early cancer already histologically present.

The patients with operable malignant disease may be divided into the following groups:

D. Clinically malignant. In this group, wherever the cancer may be situated, clinical symptoms have developed which, experience shows, with few exceptions indicate malignancy as definitely as the microscope.

E. Clinically benign. In this group the lesions, whether external or internal, exhibit none of the symptoms associated with malignancy. The nature of the disease is revealed either at the operation or later, after microscopic study.

In external cancer the diagnosis of malignancy may be made at the exploratory incision with or without the aid of a frozen section. In internal cancer we often make the diagnosis by palpation of the lesion after laparotomy.

The point that I wish to emphasize is this: So far as the operation goes, the surgeon can distinguish little difference between many of the clinically malignant and clinically benign cases. The axillary dissection in the breast lesion is just as favorable, the resection of the stomach just as simple. If these groups are carefully and properly selected, however, the difference becomes manifest after five years in the results—in the breast 80 per cent. of cures instead of 25 per cent. It seems to me that this evidence should influence every one to prefer the chances of an operation in that clinical stage in which the symptoms are either doubtful or entirely free from any evidence of malignancy rather than take chances in delay. Another factor is to be borne in mind: An operation at this stage, properly performed, should do no harm, and, even though it reveals no malignancy in its earlier stages, it may remove a focus in which the probability of development of cancer is great. This leads to the next operable group:

F. The precancerous lesion. Undoubtedly the hope for the almost complete eradication of cancer rests on the recognition and complete eradication of the precancerous lesion, whatever this may be.

In conclusion, the evidence which allows these deductions is based on the entire surgical experience of many surgical clinics, the results of which are carefully checked by pathologic examinations, and the ultimate results of which five and more years after operation are known.

The control of cancer, therefore, appears to be a matter of education and the chief object of the American Society for the Control of Cancer is to hurry on this education, so that more lives may be saved to-day.

I cannot refrain from adding the following argument in favor of surgical treatment in the precancerous or in the very early malignant stage, when the lesion is still relatively benign. Cancer in this stage is an "economical disease," at least, relatively. The expense of treatment is little, either to the hospital or to the patient, and the period of disability is short.

For most cases of external precancerous lesions, or the early stage of cancer still clinically benign, the lesion can be cut out under local anesthesia. The ordinary charge of the hospital for material at such an operation is from five to ten dollars. Most of these patients need not remain in the hospital, and often they will lose but a day or two from business. The period of disability after the complete breast operation varies from three to four weeks. The period of disability after a pylorectomy, a resection of the colon or a hysterectomy should not be more than three or four weeks. Operation in this early stage has practically no mortality, the postoperative discomforts and complications are least and the period of disability short. Delay simply means more expense to the hospital and to the patient, more danger, greater discomforts and decreasing probability of a cure.

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# THE MUNICIPAL REGULATION OF MILK-SUPPLY *

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This paper is not concerned with the advisability of regulating the production, transportation, handling, and distribution of milk. I take it for granted that there is general agreement that the milk-supply should be subject to official supervision and regulation, just as any other matter affecting the health interests of a considerable number of citizens.

On the other hand, the character of the milk ordinances and rules in force in this country at present, the relation of state to municipal control, and especially the particular methods that experience seems to indicate as most effective are questions that it may be profitable to consider.

A few facts may first be presented bearing on conditions in the United States to-day. The data were obtained from answers to a set of questions sent out from the office of the American Medical Association to the health officers of all municipalities with over 25,000 population. The questions were not intended to cover all possible or desirable phases of milk regulation, but to elicit information on certain points thought to be significant of the scope and nature of present municipal control.

There were 229 cities in the United States in 1910 with a population of over 25,000. One hundred seventy-three of these replied to the questions. For convenience the cities were divided into five groups.

Group 1.—Population over 800,000; eight cities; no reply from Pittsburgh, Pa.

Group 2.—Population 100,000 to 500,000; forty-two cities; no reply from Jersey City, N. J., Oakland, Cal., or Worcester, Mass.

Group 3.—Population 75,000 to 100,000; twenty-two cities; no reply from Houston, Tex., or Reading, Pa.

Group 4.—Population 50,000 to 75,000; thirty-six cities; no reply from Akron, O., Charleston, S. C., Peoria, Ill., South Bend, Ind., or Waterbury, Conn.

Group 5.—Population 25,000 to 50,000; 121 cities; no reply from Amsterdam, N. Y., Auburn, N. Y., Bay City, Mich., Bloomington, Ill., Chester, Pa., Dubuque, Ia., East Orange, N. J., Green Bay, Wis., Kingstown, N. Y., Lewiston, Me., Lincoln, Neb., Malden, Mass., Manchester, N. H., Newark, O., New Rochelle, N. Y., Quincy, Ill., Quincy, Mass., Chicopee, Mass., Shenandoah, Pa., Shreveport, La., South Omaha, Neb., Springfield, O., Waco, Tex., Warwick, R. I., Woonsocket, R. I.[1]

Some of the answers to the questions are presented in tabular form (Tables 1 and 2).

It is seen that the requirement of a permit or license is practically universal in all cities of over 50,000 inhabitants. Some cities in the 25,000 to 50,000 group, however, require no permit and a considerable number have no ordinance regulating the sale of milk in any way.

A license requirement seems to be the first step toward proper control. It may be recalled that when the New York City Board of Health adopted an ordinance requiring all persons dealing in milk to secure a permit, the right was contested and carried to the Supreme Court

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* Read at the Conference of the American Medical Association on Medical Education and Legislation, Chicago, Feb. 25, 1913.

[1] There is reason to believe that the majority of cities in this group from which no reply was received have practically no regulation of the milk-supply.

of the United States. That tribunal sustained the ordinance as a reasonable exercise of police power.

Dairy-farm inspection of some sort is carried on by the great majority of cities. This unquestionably varies in efficiency. The frequency of inspection ranges from "once in a year or two" and "when necessary" to regular monthly examinations. In general it seems to be true that dairy-farm inspection is more regularly and more effectively carried out by cities with a population of over 100,000 than by smaller municipalities. This is perhaps in part due to the larger sums of money available for health purposes in the larger cities, but it must be remembered that the farms supplying towns of 25,000 to 50,000 are relatively few in number and near at hand, so that the absolute expense of efficient inspection would not be great.

The score-card of the United States Department of Agriculture is commonly but by no means universally used. The dairy score-card, while undoubtedly of service, does not in the opinion of many health officers give a sufficiently satisfactory basis for judging the character of the milk reaching the consumer. General methods of grading the supply on the basis of all available information, like those in use in New York City and Washington, D. C.,[2] seem to be growing in favor in the larger cities.

TABLE 1.—REGULATION OF MILK-SUPPLY IN CITIES*

| Group | Population | No. Cities | No. Answers Received | License Required + | License Required — | Av. Price Milk per Qt. Sum. | Av. Price Milk per Qt. Wint. | Dairy Farms Inspected + | Dairy Farms Inspected — | Cattle Tuberculin Tested + | Cattle Tuberculin Tested — | Bottling & Distrib. Plants Inspected + | Bottling & Distrib. Plants Inspected — | Bacterial Standard In Force + | Bacterial Standard In Force — | Bacterial Standard Range Max. | Bacterial Standard Range Min. | Regulations Satisfactory Yes | Regulations Satisfactory No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 500,000+ | 8 | 7 | 7 | 0 | 8 | 9 | 7 | 0 | 0 | 6[1] | 7 | 0 | 5 | 2 | 500,000 | 100,000 | 3 | 3[1] |
| 2. | 100,000-500,000 | 42 | 39 | 38 | 1 | 8 | 9 | 37 | 2 | 14 | 25 | 38 | 0[1] | 26 | 13 | 5,000,000 | 100,000 | 20 | 16[3] |
| 3. | 75,000-100,000 | 22 | 20 | 19 | 1 | 8.2 | 8.7 | 20 | 0 | 7 | 11[1] | 20 | 0 | 14 | 5[1] | 1,000,000 | 20,000 | 12 | 6[2] |
| 4. | 50,000-75,000 | 36 | 31 | 24 | 3[4] | 8.4 | 8.6 | 29 | 1[1] | 11 | 18[2] | 30 | 0[1] | 15 | 12[4] | 1,000,000 | 100,000 | 12 | 14[5] |
| 5. | 25,000-50,000 | 121 | 96 | 76 | 16[4] | 8 | 8.6 | 74 | 17[5] | 28 | 65[3] | 79 | 10[7] | 38 | 52[6] | 1,000,000 | 20,000 | 45 | 41[10] |

* Numbers in brackets indicate number of cities not answering question.

TABLE 2.—PASTEURIZATION*

| Group | Population | No. Cities | No. Answers Received | Over 50 Per Cent. Pasteurized | 10 to 50 Per Cent. | 0 to 10 Per Cent. | None | Inspection + | Inspection — | Regulations + | Regulations — | Bacterial Standard In Force + | Bacterial Standard In Force — | Bacterial Standard Range Max. | Bacterial Standard Range Min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 500,000 | 8 | 7 | 5 | 2 | 0 | 0 | 7 | 0 | 1 | 5[ 1] | 4 | 3 | 500,000 | 50,000 |
| 2. | 100,000-500,000 | 42 | 39 | 10 | 13 | 7 | 3[ 6] | 33 | 2[ 4] | 7 | 17[15] | 14 | 21[ 4] | 500,000 | 10,000 |
| 3. | 75,000-100,000 | 22 | 20 | 3 | 10 | 0 | 1[ 6] | 13 | 3[ 4] | 4 | 10[ 6] | 6 | 10[ 4] | 500,000 | 10,000 |
| 4. | 50,000- 75,000 | 33 | 31 | 4 | 9 | 6 | 6[ 6] | 17 | 1[13] | 4 | 12[15] | 1 | 25[ 5] | 50,000 | 50,000 |
| 5. | 25,000- 50,000 | 121 | 96 | 9 | 21 | 14 | 33[14] | 40 | 11[ 9] | 10 | 33[21] | 17 | 47[13] | 500,000 | 10,000 |

* Numbers in brackets indicate the number of cities not answering question.

A number of municipalities require that the tuberculin test be applied to herds furnishing milk, but the requirement is far from universal (33 per cent.). Bacterial standards for raw milk, ranging from 100,000 to 5,000,000 (this is the only one over 1,000,000!) have been established by the large majority of cities with over 100,000 population (forty-six cities in Groups 1 and 2). Sixteen cities out of forty-six reporting fix a limit of 500,000. The cities with 25,000 to 50,000 population are much more generally without bacterial standard, largely, doubtless, because of the lack of suitable laboratory facilities for enforcing such a requirement.

The process of pasteurization is much more extensively employed in some cities than in others. In some of the larger cities, as much as 70 to 80 per cent. of the whole supply is pasteurized. About 30 per cent. of the cities with over 100,000 population have half or more of their supply pasteurized. A very striking feature of the reports is the general absence of any regulation dealing with the pasteurizing process, even in municipalities where a large proportion of the supply consists of heated milk. A number of health officers state that this condition will be remedied soon by the passage of ordinances dealing with the legal definition and control of pasteurization. A smaller proportion of the cities in the 25,000 to 50,000 group report pasteurization of any considerable part of the supply, but in them also, the pasteurizing process is evidently gaining ground. It is unfortunately true that supervisory control of pasteurizing plants is no more general in the small than in the large cities.

A comparison of the milk supply conditions in 1912 (Table 2) with those prevailing ten years previously is facilitated by a study made in 1902 by Alvord and Pearson[3] of the U. S. Department of Agriculture. Briefly stated, some of the principal changes in ten years appear to be:

1. An increase in the retail price of milk has occurred in all parts of the United States and averages 2 to 3 cents a quart (in some localities certainly the greater part of the increase has gone directly to the producer).

2. An extensive development in methods of supervision and an increase in the amount expended for supervision have taken place. The city of Denver spent $1,200 for all supervision in 1902, $5,000 for farm inspection in 1912. Ten years ago the city of St. Louis spent $1,850 for the supervision of its milk-supply, in 1912, $5,650 was spent for farm inspection alone. Chicago expended about $10,000 for the whole supervision of its milk-supply in 1902 and about $25,000 on farm inspection alone in 1912. New York made 41,292 farm inspections in 1912 at a cost of $76,080. The same change has occurred in some cities of 25,000 to 50,000 population. Haverhill, Mass. (population 44,000), which expended $150 for supervision of the milk-supply in 1902 had increased the amount to $1,600-$1,700 in 1912. Little Rock, Ark., which reported no milk ordinance and no supervision over its milk-supply in 1902 was spending $3,750 for farm inspection in 1912. Together with this increase in

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[2] Woodward, William C.: A New Method of Grading Milk and Cream, Public Health Rep., Feb. 21, 1913.

[3] Alvord and Pearson: The Milk-Supply of Two Hundred Cities and Towns. Bureau of Animal Industry, Bull. No. 76.

the amount expended for supervision has gone a change in the character of the supervision, which can on the whole be regarded as advantageous from the public health standpoint. It can no longer be said, as it was said in 1902, that "most of the inspection work consists in testing samples of milk to ascertain if they contain as much fat and other solids as required by the standard." There is no doubt that at present much more attention is paid to matters of real sanitary significance, such as the health of the cows, the conditions under which milk is collected and transported, and the health of persons handling the milk, than was the case ten years ago. It is encouraging to note also that the practice of adulteration and the addition of preservatives do not seem at present to be as widespread as formerly.

While there can be no doubt that the development in dairy inspection which has occurred in the last ten years has been on the whole in the right direction, it seems particularly important not to invite criticism from the sensitive agricultural interests by placing this branch of milk control in unskilled hands. When it is possible to make a statement like the following, the need of carefully appraising the competency of would-be milk inspectors is apparent.

"In the case . . . mentioned all but nine out of 343 dairies were condemned by the 'inspectors.' The inspectors were aged 26 and 21, respectively. The elder had never lived or worked on a farm, or in a dairy; his education to qualify him to make about half of the above noted inspections was gained in attending a dairy school from ten to fifteen days. Armed with the knowledge thus acquired, he in one day 'instructed' his associate, who had never lived on a farm or worked in or seen a dairy. With this one day's instruction our 21-year-old inspector condemned the other half of the above-mentioned dairies. This is taken from the sworn testimony of the 'inspectors' acting for a city having a population of over 200,000."[4]

Such extreme instances as the cases above cited are probably not common, but there is reason to believe that the cause of much opposition to reasonable milk standards and regulations may be traced to the vexation produced in farmers and dairymen by the acts and utterances of ignorant or overbearing inspectors.

It is questioned by some whether the large sums of money expended in dairy-farm inspection and score-card rating have really given an adequate return in the prevention of communicable diseases. It is pointed out that the real danger to the public health lies not so much in the entrance of cow manure into milk, objectionable as this is, as in the actual infection of the milk with disease germs. However this may be, there is no doubt that farm inspection with all its shortcomings has done much in the last decade to raise the standards of rural sanitation as well as to improve the general character of city milk supplies. Whether or not as a public health measure it deserves all the emphasis we are now placing on it is a matter for future experience to determine.

3. A particularly noteworthy change that has occurred in the past ten years has been the growth of the process of pasteurization. In New York City it could be said ten years ago that "perhaps 5 per cent. of the total milk-supply is pasteurized," while it was true in 1912 that 40 per cent. of the supply was pasteurized. In Boston the report in 1902 was that "very little pasteurized milk is on the market and it is not increasing in favor," but 75 per cent. of the market milk was pasteurized in 1912. The same change may be remarked in smaller cities. Instances picked at random are: Springfield, Mass., with "no milk pasteurized" in 1902, but with 20 per cent. pasteurized in 1912; Lansing, Mich., with "a very small amount" in 1902 and one-third in 1912; Aurora, Ill., with 10 per cent. in 1902 and 85 per cent. in 1912. Whether or not one believes this to be a change for the better, the actual conditions should be recognized and ampler provision made for supervising the process of pasteurization. At present many municipalities possess no regulations governing this important matter.

Without entering at this time into a further analysis of the answers to the questionnaire it is worth noting that of 172 health officers from whom replies have been received 80, or nearly one-half, regard their present local regulations for the control of milk-supply as unsatisfactory. The improvements suggested include such matters as better facilities for maintaining a bacterial standard, more ample provisions for the enforcement of existing regulations, strict application of the tuberculin test, while in a good many instances—towns of from 25,000 to 50,000—the desideratum is a proper milk ordinance. Some health officers suggest compulsory pasteurization either of all milk or of all milk not obtained from tuberculin-tested herds. The admirable New York City rules and regulations relating to the sale of milk are specifically mentioned in some cases as the goal to be reached.

On the technical-legal side two points may be touched on: (1) the need for a uniform or uniformly efficient milk ordinance which shall cover the essential requirements clearly and concisely and shall be open neither to the charge of legal vagueness nor technical inadequacy,' and (2) the proper adjustment of state and local control. As an illustration of the present muddled situation respecting the first of these points I have collated some thirty-nine excerpts from milk ordinances dealing with the single question of milk delivery at houses where there is any contagious disease. The number of words in which this topic is dealt with in the various regulations ranges from 27 to 197. Many of the regulations examined prohibit the leaving of bottles or other milk containers, but allow milk to be poured by the milkmen into receptacles furnished by the families. When delivery of receptacles is allowed, the board of health is often, but by no means always, made responsible for overseeing their disinfection, before again passing them into circulation. One municipality declares that bottles must be sterilized by boiling "in water kept at the boiling-point for fifteen minutes, said sterilization to be done by the party using the milk." The milk dealer is made responsible for seeing that these directions are carried out and is to be penalized for receiving "such bottles not so treated" by having his license suspended or revoked! One of these sections recites that "no person, persons, firm, corporation or association shall refill any receptacle without being first washed," etc. Another guards against legal misunderstanding by the following language:

> It shall be unlawful for any person to serve any milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk, in bottles to any dwelling in which any person is ill with any contagious, infectious, or communicable disease, or to any dwelling on which there is a placard or notice stating or indicating that any person therein is ill with any contagious, infectious, or communicable disease until after such placard shall have been removed by the proper officer.
>
> It shall be unlawful for any person to remove from any such dwelling any bottle or receptacle which shall have been

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[4] Carlin: Creamery and Milk Plant Monthly, 1912, i, 10.

> or is to be used for the purpose of receiving, storing, or delivering milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk, or into which any milk, cream, buttermilk, skimmed milk, condensed or evaporated milk, or condensed or evaporated skimmed milk shall have been or is to be placed, or which is commonly used for the reception, storage, or delivery of milk, cream, buttermilk, skimmed milk, pasteurized milk, condensed or evaporated milk, or condensed or evaporated skimmed milk.

The confusion and divergence shown in both wording and intent are sufficient to demonstrate the desirability of drafting a model milk ordinance, which shall allow modifications for local conditions, and shall fit especially the needs of communities with from 25.000 to 75,000 inhabitants. Larger cities are at present fairly well off in the matter of milk regulation, but many of the smaller cities are without any ordinance at all and the health officers, as shown by their answers to the questionnaire, would welcome the opportunity to press for an ordinance backed by the prestige of some influential body of workers. Some of the discrepancy in practice and the confusion of legal phraseology which exist now in the milk rules of a few of the large cities might be cleared up also by an open discussion of the essential points to be included in a model ordinance.

The relation of local to state and federal control of health matters opens a wide question which can only be touched on here. Possible conflict between municipality and state in health matters is illustrated in the extraordinary act passed by the Illinois legislature on the tuberculin test.

> It shall be unlawful for any city, village, incorporated town, county, or other incorporated authority by ordinance or otherwise to require the tuberculin test to be applied to dairy animals as a means of regulating and purifying milk, skimmed milk, cream, and other dairy products. Every such ordinance or regulation passed by any corporate authority other than the state of Illinois is declared void. (Filed, June 12, 1911, became a law without the governor's signature.)

This is an interesting reversal of the theory that the local authorities are likely to be derelict in health matters and that the state must step in and set things right. There is at present no legitimate appeal from such action on the part of the state. In practically all states of the Union the source of authority both for the creation of administrative bodies in health matters, and for the exercise of their power, resides in the state legislature.

Not only may a good regulation be superseded or annulled by a state enactment, but duplication and confusion may be brought about by the existence of conflicting state and municipal regulations. This is particularly so in a matter like milk-supply, where the protection of public health may require interference with an economically important and politically influential interest. City dwellers may be at the mercy of the embattled farmers to a practically limitless extent. Fortunately a spirit of fair play often prevails and the predominantly agricultural counties rarely attempt to club the cities into submission. This is all the more reason for recognizing the present unsatisfactory situation.[5]

In many states there are two sets of inspectors, state and metropolitan, visiting the same farms and attempting to regulate the same industry. Even when regulations do not actually clash state and city are apt to have somewhat different standards, and state and city inspectors will approach the dairy-farms from quite different points of view, as is inevitable considering the derivation of their authority. In England a somewhat similar conflict has been recognized between the health needs of a town community and the agricultural interests of the surrounding district. The *British Medical Journal* (Dec. 21, 1912) thus comments on the Milk Bill recently under discussion:

> On December 10, the president of the local government board introduced a bill to make better provision with respect to the sale of milk and the regulation of dairies in England and Wales. . . . In order to secure improvement in these particulars, the Milk Bill provides for the inspection of dairies by the medical officer of health—a duty which is already imposed on that official. We have no hesitation, however, in saying that the results of those inspections, and of the reports and recommendations which will be the outcome of them, will continue to be unsatisfactory, and for this reason: The medical officer of health is elected by, and may be dismissed at three months' notice by, the rural district council, the members of which in many instances are either themselves dairy farmers or their friends and neighbors. . . . For years past royal commissions and committees have recommended that medical officers of health should not be removable from office except with the sanction of a central authority, and we have reason to know that the urgency of this reform has been impressed on the Rural Housing Inquiry Committee, which is reporting to the Chancellor of the Exchequer, so that the government is not ignorant of this necessity and importance. Opportunity was taken on the passing of the Housing, Town-Planning, etc., Act, 1909, to give security of tenure to medical officers of health of county councils, who are far less likely to come into direct conflict with the holders of insanitary property, etc. If the government has a real desire to improve the milk-supply of the country, it will place medical officers of health of districts in a like unassailable position so long as they carry out their duties in a satisfactory manner.

The apparent conflict between the agricultural interests and the requirements of public health is not the only difficulty met by health authorities. In some instances the actual power of the local board of health has been called in question. In Massachusetts the supreme court recently decided adversely to the regulation of the Boston Board of Health restricting the sale of so-called "loose milk." The supreme court was of the opinion "that the statute under which the board assumed to act is not broad enough to give them this authority." The very same decision, however, goes on to declare that "we do not consider the question whether this regulation goes beyond the constitutional power of the legislature to enact as a statute or to authorize the board of health to establish locally."[6]

Both as regards the real power of local boards of health and as regards the overriding of local authority by state legislatures there seems ample opportunity for discussion. The present tendency seems to be for the state to assume authority over many matters previously left to local control. State commissions and state boards are appointed to exercise supervision over minute details of municipal administration. It may be questioned if on the sanitary side this may not be carried too far. The problems of sanitary administration in a large city are of quite a different nature from those in small towns or in thinly populated districts, and it is certain that general state regulations applying to the latter group will often not fit the needs of the former. Local regulation in sanitary matters which are largely dependent on local conditions would seem a reasonable exercise of the principle of self-government. The fundamental principle of home rule is violated by any state enactment which, like the Illinois law before cited, forbids the inhabitants of any city to take measures that they consider desirable for the public health. We need not have too much fear of being checked on the legal side in an attempt to adjust local and state jurisdiction. The courts will in the long run reflect dominant public opinion. In this very matter of milk regulation where conflict of authority and wasteful duplication at present exist the legislature and the courts must be made acquainted with prevailing scientific opinion, and there will be little doubt of the final outcome. In the recent decision on the cleaning of milk receptacles rendered by the Court of Special Sessions of the City of New York the recognition of the peculiar health needs of a great metropolis is everywhere apparent.

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[5] At an interstate conference in New York City in February, 1913, delegates from eight states on the North Atlantic seaboard discussed the state control of the milk industry. Three delegates from each state representing, respectively, the State Board of Health, the State Agricultural Department and the dairy interests of the state, were appointed by each governor. The results of the conference are thus interpreted by a trade journal (Creamery and Milk Plant Monthly, February, 1913): "The theorists and the medical extremists on the governing of milk-supply were voted down . . . and the practical and common-sense view prevailed." The consequences of having an industry regulated by its "friends" are familiar to the American people.

[6] Am. Jour. Pub. Health, 1912, ii, 107.

> It does not seem that the clause that provides that anyone who has in his possession such unclean receptacles is guilty of a misdemeanor in any way conflicts with the aforesaid law, but that it is an enactment in addition to the Agricultural Law, which the board of health is empowered to make for the greater welfare of the inhabitants of a great metropolitan center. When one considers the physical conditions which surround a cosmopolis like New York City, the crowding together in small places of so many individuals; the dirt, filth and germs which are bound to accumulate in spite of most strenuous efforts; the poverty, sickness and uncleanliness of so many citizens, it is at once apparent that the greatest care must be taken in the transportation of a commodity like milk, which is daily used practically in every family, and which is without doubt more susceptible of taking up germs and scattering them broadcast than any other product. . . . The Sanitary Code in Section 183 has as its object the prevention of the creation and spreading of disease germs and pestilence in a crowded city, and the act of the defendant in carting these unwashed cans to a railroad station to be shipped in that condition is a dangerous act, and any statute forbidding such a practice is unquestionably reasonable in character.[7]

The Appellate Division of the Supreme Court of New York later affirmed this judgment with the significant remark:

> Both the statute and the ordinance are undoubtedly drastic, but the danger to be apprehended from the use of unclean receptacles for milk intended for human food is too obvious and so well known that drastic measures to prevent the possibility of such use are reasonable and justifiable.[8]

It is sometimes asserted that the authority of a city inspector ends at the city line and that outside dairy inspection or interference with milk shipments from a distance is unjustifiable. Under this head another recent decision handed down by the Court of Appeals in New York is of great importance. A dairyman outside the city of New York sued the chief of division of food inspection for damages sustained through his official action in notifying a creamery company not to include the plaintiff's milk in its shipments to the city, the officer in question having acted on the report to his department by its inspector that the conditions of the plaintiff's dairy were insanitary. The complaint was dismissed in the Supreme Court of Delaware County, and was appealed by the plaintiff with the result that the judgment is affirmed. The decision includes the following lucid and emphatic statement:

> The Department of Health of the City of New York is charged by law with the responsibility of preventing pestilence and disease in the city of New York. Its duty is to enforce all laws applicable to the preservation of human life and the promotion of health and such as relate to the use or sale of unwholesome, deleterious or adulterated food. In the faithful and efficient performance of that duty, the whole state, as well as the city, is concerned, and the department must be deemed to possess whatever power is needed to make effective the express powers conferred. . . . Of the food-supplies introduced into the city of New York, milk is one of the most important. It is now a matter of common knowledge that, if infected, it carries with it the germs or bacilli of dangerous and epidemic diseases. It is the food of the infant and it is an important element of the food of the adult. It may be infected as it comes from the cow or it may be contaminated by reason of the insanitary conditions of the dairy. Whatever, therefore, the department of health may do toward preventing the introduction of milk into the city of New York, which its officers have reason to believe is unwholesome and deleterious, is in the performance of a statutory duty. It is unreasonable to say that the department of health, in exercising such a power, renders itself amenable to the charge of exercising an extraterritorial jurisdiction. In notifying the creamery company not to include the plaintiff's milk in its shipments to the city, it was acting for the protection of the inhabitants of the city of New York, and, therefore, for local interests. There was no interference with the plaintiff's conduct of his farm or business except as he proposed to supply milk to the city of New York there was simply an embargo laid on the introduction within the city of New York of any milk not produced by him under conditions specified by the department. It had the right to exact from all shippers of milk a compliance with such conditions as would reasonably tend to a pure product for the use of the citizens, as a condition of permitting its sale in the city of New York. In exercising the supervision and in taking the preventive measures, which appear in the evidence, the department of health was properly and reasonably executing the duty imposed on it by the statute of conserving the public health; in which, as I have already observed, the state at large is equally interested with the city.[9]

The right of a municipal health department to confiscate and destroy milk not conforming to standard has been sometimes questioned, and the Wisconsin Supreme Court decision (May 12, 1913) marks the first legal test of the matter.[10] The tenor of the decision is similar to those already cited:

> The ordinance is not an arbitrary and unreasonable deprivation of property in a wholesome food, but a regulation having the purpose of and found to be necessary for the protection of the public health. The police power of the state must be declared adequate to such a desired purpose. . . . Even if the necessity of the tests be not demonstrated and the beliefs which induced them may be disputed, they cannot be pronounced illegal. . . . We agree with the court that the destruction of the milk was the only available and efficient penalty for the violation of the ordinance.

There is thus ample evidence that the courts stand ready to uphold the enforcement of ordinances and measures designed to protect the public health, and that they will support any reasonable regulation of the public milk-supply. The opinion of disinterested experts and of officials who are endeavoring to serve the public health is bound to have greater weight with the courts than the pleadings of self-interest. While no one questions that the individual should be protected from injustice on the part of the community at large, it is nevertheless true that the health interests of the community are likely to remain paramount, and that individual hardship or injury must be acute indeed if consideration for it is suffered to override the regulations deemed necessary to safeguard the public health.

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[7] Month. Bull. Dept. of Health, City of New York, December, 1912.

[8] Month. Bull. Dept. Health, City of New York, February, 1913.

[9] Weekly Bull. Dept. Health, City of New York, March 15, 1913.

[10] Weekly Bull. Dept. Health, City of New York, June 14, 1913.

Attention may be called finally to a means for stimulating a sense of responsibility in milk-dealers which has as yet been taken little or no advantage of in this country. In Great Britain, both juries and the Court of Appeal have answered affirmatively the question of the liability of milk-dealers for cases of infection traced to milk. In one instance, cited by Savage,[11] the Court of Appeal held that the sale of an article for a specific purpose carried an implied warranty by the vendor that it was reasonably fit for the purpose and that there was no exception as to latent undiscoverable defects. In another case, a question of liability was held to be unaffected by the assumption that the farmer had taken all possible precautions.

The municipal regulation of milk-supply in the United States at present seems to lack little in the way of legal authorization or of support by enlightened public opinion. Dairy inspection, bacterial control and proper grading seem to have been carried farther in this country than anywhere else. Perhaps the points in most immediate need of improvement are (1) the definition and proper control of the process of pasteurization, and (2) the adoption and enforcement of suitable milk-supply regulations in cities with less than 50,000 population.

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# SEVEN CASES OF EPILEPSY IN CHILDREN

## TRACED TO SINGLE ALCOHOLIC INTOXICATIONS ON THE PART OF ONE OR BOTH PARENTS OTHERWISE TEETOTALERS [*]

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The relation of alcoholism to epilepsy is a subject of such magnitude, so comprehensive, varied and yet so familiar, that I shall confine myself briefly to but one small section or aspect of it—not so far as I know specifically referred to by previous writers—namely, the relation that single alcoholic inebriations on the part of one or both parents otherwise teetotalers bears to the child whose genesis occurs under such condition. It has been estimated that there are about 30 per cent. of epilepsies, not including other ancestral neuropathic disorders, in which a family predisposition cannot be found. It is an attempt to explore, even if inadequately, this pathologic *terra incognita* and point out as far as possible the origin of at least a few of these that this paper is written; for there must be some cause, connected probably with progenitors, to explain the elusive 30 per cent. whose primal chronology is at present shrouded in mystery.

In the light of comparatively recent physiologic discovery connected with the temporary effect of alcohol on the system at large, pointed out perhaps first by Richardson, and since notably by Schnyder and Dubois of Berne, Switzerland, Kraepelin of the University of Munich, Martin Mayer of Heidelberg, Hellsten of Helsingfors and Aschaffenberg of Munich, it seems possible to perceive that intoxication of one or both parents at the time of conception, independently of the physical and nervous deterioration common to chronic drunkards, may make clear the causation of some of these, as it seems to have explained to me the seven cases whose histories I am about to relate. According to the observation of nearly all epileptologists, there can be no doubt in regard to the effect of alcohol in general as a frequent factor in the production of epilepsy. The difference among observers is one of degree rather than kind. Maudsley, for example, is responsible for the startling expression that "epileptics, because of drink on the part of parents, are as much manufactured articles as are steam-engines and calico-printing machines."

In regard to the rôles played by even ancestral epilepsy as contrasted with ancestral drunkenness as causes of congenital epilepsy, opinions differ but slightly, but mostly agree on the main point, that drunkenness rather than epilepsy itself is more prolific in transmitting epilepsy to offspring. For America, Dr. Spratling of the Craig Colony for Epileptics at Sonyea, N. Y., is the dissenter in regard to this point. He says that only 14 per cent. of the thousand inmates of his institution had drunken parents, while 16 per cent. had epileptic parents; but Echeverria, the first American to write a book about epilepsy, in an analysis of 572 patients, gives parental intemperance as the cause of 17.5 per cent., while parental insanity associated with epilepsy stood for but 15 and a fraction per cent. This is a remarkable statement, as it shows in Echeverria's group of 572 cases that a greater percentage of epilepsies was produced by drunken parents than by epileptic and insane parents combined.

For France, Molli has assured us that of all persons inheriting impaired nervous systems from drunken parents, from 30 to 40 per cent. of them were epileptics, and the same writer quoting from M. Hippolyte Martin, who collected a great many curious facts about ancestral intemperance and its visitation on children to the third and fourth generation, says that in 150 cases of insane epileptics at the Salpêtrière, he found that eighty-three had intemperate parents, that is, nearly 60 per cent.; and of the 2,554 children admitted to the Bicêtre suffering from idiocy, epilepsy, imbecility and hysteria, 1,053 were the offspring of drunken parents. The same writer followed to the death a number of these patients to show that no hereditary tendency other than alcoholism produced the susceptibility to convulsions.

Dejerine also said of France that "51.5 per cent. of all epilepsies in children are due to parental alcoholism and but 21 per cent. to parental epilepsy." Thus, emphasizing again, I repeat the remarkable statement of Echeverria that as far as congenital epilepsy is concerned, it is more dangerous to the prospective child, other things being equal, to have a drunken than to have an epileptic father or mother.

For Germany, Binswanger declares of epileptics "made in Germany" that 22 per cent. of them have had their origin in chronic parental inebriation, while but 11 per cent. were due to parental epilepsy.

I should not refer to these familiar, if curious, statements with regard to the ravages of these rivals in destruction—epilepsy and drink—these twin brothers I might say in etiologic iniquity—were it not for their closeness, as it were, in consanguinity to what will be said later on.

In explaining the relationship of parental drunkenness as a causative factor in the production of the disease under discussion, it has been the custom with writers on the subject to refer it almost exclusively to that state of bodily and other deteriorations brought about by chronic alcoholic excess—such as "physical wreck," "disorganization and disturbance of the nervous system," "loss of muscular equilibrium and its cause," "diseased stomach, liver, intestines," "lowering of the bodily temperature, depression and acceleration of the heart resulting in degenerative lesions," "disintegration of muscular nerve and organic tissue," "toxemias," "degeneration of cerebrospinal system," "abnormal state of the upper portion of the cerebral mass, when the mind loses, if but periodically, its controlling influence and the rational faculties give way," "the effect on nerve structure, mucous and serous membranes," "the blood and all secretions," and any or all the physical woes released from their Pandora box by inebriety.

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[11] Savage: Milk and the Public Health, Macmillan & Co., London, 1912.

[*] Read in the Section of Psychiatry of the Seventeenth International Congress of Medicine, London, 1913.

Children whose genesis results from the union of the victims of such physical discrepancies must almost necessarily, we may think, be born with that reflex susceptibility and the like which makes them prone to epilepsy or other mental and motor disturbances; or, in other words, it would seem that offspring born as the result of the consorting of such abnormal persons must inherit a physical or nervous vulnerability not like Achilles', of the heel only, but of the whole nervous system, which but waits for the inescapable touch of the invisible hand —the special exciting cause—to develop into epilepsy or other such diseases as vasomotor spasms, chorea and allied distempers and degeneracies of the nerve centers, and that whole school of juvenile invalidisms seen chiefly in sanatoriums for the feeble-minded, idiots, imbeciles and the insane. This, then—drunkenness—is usually and properly given as the explanation of many epilepsies, especially when the family landscape presents a background of protracted intemperance.

Yet, although according to the consensus of opinion as exhibited by the authorities I have quoted, drunkenness and its consequent degeneracy explain about 35 per cent. of epilepsies, it does not at all explain the cases I am about to enumerate, for the parents of these patients were not physically degenerate; there was no history of epilepsy or other neuroses in their respective families, and they were not addicted to intemperance, or in any way enfeebled by disease or excess, except one father, who was consumptive in the last stages of the disease, living in a camp with other consumptives, and visited but on rare occasions by his entirely normal wife.

Case 1.—The child, the result of this union, at a time when the father was under the influence of liquor, was posthumous, being born six months after the death of its father, who died suddenly while mailing a letter three months after the last visit of his wife. The child developed epilepsy in its third year.

Case 2.—The patient was the child of an engineer called from home to fill an important position on a sugar plantation in Cuba. He had been a total abstainer, but before embarking for his new quarters, leaving his wife and two children behind, was tendered a farewell banquet by friends, when he got into a state as he called it of "alcoholic hilarity," the first time in his life. Nine months after his embarkation for his new post his wife gave birth to a son who developed epilepsy in his fifth year.

Case 3.—The patient was the daughter of the widow of a soldier who died in the Philippine Islands of dysentery three months after landing. His wife assured me that she never knew her husband to drink anything intoxicating until a few days before his enlistment, when he came home in a state of alcoholic excitement, after having spent the day with some soldier friends. Next day he enlisted and she never saw him again. In due time a boy was born; on the third day after its birth it went into convulsions, remaining in them for nearly two days, and since—until it came under my care seven months ago—it averaged during the eight years of its life about one grand mal weekly, with frequent attacks of petit mal, although it has had as high as six convulsions in a day.

Case 4.—The patient was the daughter of a medical man who had never tasted liquor until the night of his first intoxication. When he began the study of medicine he was married, with two healthy children. There was no family history of epilepsy or other neuroses. On the night of the commencement of his college, one of the professors, as was the custom, gave a reception to the new-fledged doctors, when he drank his first glass of wine and another and another, and promptly became intoxicated. He declares that his epileptic child, born about the regular time after this "debauch," as he called it, developed convulsions in its second year, consisting at first of but three, at intervals of a week apart, when they disappeared for two years, but returned again at periods of about one every two or three months. Of late, they have been developing with greater rapidity, showing, too, an erratic disposition on the part of the patient amounting to mild insanity.

The other three illustrations coming under my observation are already on record.[1] Two of them, in different families were traced by the parents themselves to single transgressions in the use of intoxicants. The father of one of the families afterward became a chronic inebriate and died of pneumonia following an attack of delirium tremens, but outside of that there was no trace of degeneracy in his race as far as could be discovered. The child is still living, an inmate of an epileptic colony. The wife is married again and the mother of two robust children.

These, in all probability, would have been accounted among the 30 per cent. of epileptics the origin of whose conditions would have been unknown but for pointed questionings, for the most abstemious of people may on anniversary or other occasions lapse into an intoxication not desirable to remember, or perhaps never thought of in connection with the resultant sick child.

I know no better explanation, therefore, of the advent of at least some of these unsound members into otherwise healthy families, than the one that tells that they entered while at least one of the sentinels was drunk.

This theory, then, suggested by the chapter on alcohol in Richardson's "Diseases of Modern Life," Metchnikoff's "Studies of the Blood," and the recent investigations of the German writers mentioned in the beginning of this paper will enable the physician, I think, to trace the origin of many cases of epilepsy of unknown cause back to their probable source.

Richardson pointed out long ago the changes effected almost instantly on the constituents of the blood by alcohol, and Metchnikoff since, in perhaps a more intimate study, has shown in particular its effect in producing temporary paralysis of the white corpuscles—the phagocytes.

Since alcohol, therefore, produces such important changes in all the ingredients of the vital fluid, as well as the secretions, may we not, reasoning by analogy, assert that it also influences or changes the constituents of the seminal fluid, paralyzing temporarily and otherwise altering the spermatozoa as it does the corpuscles and serum so that we might hazard the conjecture that it is not so much chronic drunkenness, as drunkenness at the time of conception, that causes the transmittal of an often overwhelming neurosis to offspring, and that at least some of these anomalies of apparently spontaneous development may be prevented by avoidance of the use of alcohol at the time of prospective procreation?

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[1] Woods, Matthew: Relation of Alcoholism to Epilepsy, The Journal A. M. A., Feb. 9, 1907, p. 469.

# RESULTS OF STAPHYLOCOCCUS SPRAY TREATMENT IN FORTY-TWO CASES OF DIPHTHERIA CARRIERS[*]

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Since diphtheria antitoxin has come into general use, quarantine of diphtheria cases is especially irksome. The patient is apparently perfectly well in a few days and the members of the quarantined family think that they are needlessly oppressed. The fact, remains, however, that although the use of antitoxin results in a speedy disappearance of all symptoms, nevertheless the diphtheria organisms may still be found in the throat, and are just as likely to infect others as they were when the patient was sick.

It is impossible to tell from the ordinary examination by culture whether the bacilli are virulent or not, and as animal inoculation is not usually possible in municipal laboratories, the quarantine is sometimes continued until the germs disappear from the throat, two or three negative cultures being required for release. This sometimes extends the period of quarantine for several weeks and it becomes a severe hardship to the family affected.

The period of time during which the throats remain positive varies with different patients and different epidemics. Nuttal and Smith[1] state that the average time during which notified cases remained positive was 31.6 days, infected healthy contacts averaging 36.4 days, ranging from seven to ninety days. In an epidemic of diphtheria in New Castle, Pa., in 1912-1913, there were 125 clinical cases and ninety healthy contacts were cultured; 80 per cent. of the clinical cases and 77 per cent. of the healthy contacts remained positive thirty days or longer. It is not known how much longer these throats remained positive, since no cultures were taken after sixty days.

It would seem, however, that the organisms had lost their virulence to a great extent since the children were permitted to attend school after sixty days even though they had positive throats. A close watch was kept of these children and it did not appear that they spread the disease.

It would certainly be very gratifying if some means could be devised whereby these throats could be freed from the diphtheria organisms, thus lessening the period of quarantine and the danger of infection.

Various antiseptic solutions have been used without much success; Loeffler stated at the Fifteenth International Congress on Hygiene and Demography that he had not found any treatment very helpful in clearing up the throats. Schiøtz[2] observed that in cases in which he had found the throats infected with diphtheria bacillus, a supervening infection with staphylococci caused a disappearance of the diphtheria organisms. Thinking that possibly the staphylococcus smothered out the other organisms, he obtained a staphylococcus culture from a healthy throat and applied it to the throat of five diphtheria carriers. The diphtheria organisms disappeared promptly and he concluded that the staphylococcus caused the disappearance.

Other workers have experimented along this line: Catlin, Scott and Day[3] report its use in twenty-two cases with apparently good results, Alden[4] reports sixteen cases with good success. Others reporting investigation are Page,[5] Lake,[6] Bell,[7] Wiener,[8] and Slack, Arms, Wade and Blanchard.[9]

Lorenz and Ravenel[10] report the use of a spray consisting of a bouillon culture of *Staphylococcus aureus* or a fresh suspension in salt solution. Seventeen patients received the treatment. In three pure carriers the results were very good. In six clinical cases in which the throats remained positive after recovery, four cleared up in one week, while in two cases the results were not so good. In eight cases treated early in the disease, four cleared up promptly, while three remained positive for twenty-two, thirty-six and thirty-nine days. Fay,[11] in a study including both the staphylococcus spray and antiseptics, did not obtain very good results from the spray. De Witt[12] reports that there is no antagonism between the two organisms in test-tubes, and in animals the results are not encouraging.

Thinking that perhaps we might derive some benefit from the use of the staphylococcus spray in lessening the period of quarantine, we used it in New Castle during the winter of 1912-1913. The spray consisted of a bouillon culture of *Staphylococcus aureus* at least twelve hours old or a fresh suspension in salt solution. Only one strain was used. This organism was obtained from the throat of a child of a family in which five other children presented positive diphtheria throats, this one alone being negative and furnishing a pure culture of *Staphylococcus aureus*. One member of the family had diphtheria, the others all receiving prophylactic does of antitoxin.

The spray was prepared in the municipal laboratory and delivered personally to the attending physician or nurse with explicit directions as to its use. They were directed to spray copiously both nose and throat three times or more each day and cautioned not to use any other form of treatment. The families were all intelligent people and anxious to use the spray to the best advantage, so that it would seem that the results should be a fair test of the value of the treatment as applied to municipal work.

The physicians and families were told the nature of the spray and asked to give a full account of its use. No one reported any untoward results.

Two classes of patients were treated: those who had showed clinical symptoms and still harbored the bacilli, and those who had not presented any symptoms but were healthy carriers.

Of twenty-two cases of diphtheria treated with the spray, five cases, or 22.8 per cent., showed two negative cultures before thirty days, while of twenty-two cases not sprayed, four cases, or 18.2 per cent., cleared up before thirty days. This would seem to indicate that the spray was not of much help in clearing up the throats.

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[*] Because of lack of space this article is abbreviated in THE JOURNAL by omission of the tables. The complete article appears in the author's reprints.

[1] Nuttal, C. H. F., and Smith, G. S. Graham: The Bacteriology of Diphtheria, 1908, p. 421.

[2] Schiøtz, A.: Ugesk. f. Laeger, 1910, lxxi, No. 49, abstr., THE JOURNAL A. M. A., Jan. 29, 1910, p. 422.

[3] Catlin, S. R.; Scott, L. O., and Day, D. W.: Successful Use of the Staphylococcus Spray on Diphtheria Carriers, THE JOURNAL A. M. A., Oct. 28, 1911, p. 1452.

[4] Alden, A. M.: The Staphylococcus-Spray Treatment of Diphtheria Carriers, THE JOURNAL A. M. A., June 14, 1913, p. 1876.

[5] Page, Henry: Diphtheria Bacillus-Carriers, Arch. Int. Med., January, 1911, p. 16.

[6] Lake: Med. Rec., New York, 1912, lxxxi, No. 26.

[7] Bell: Lancet Clinic, cviii, No. 9.

[8] Wiener, R. G.: Use of Bouillon Culture of Staphylococcus Pyogenes Aureus in Diphtheria Convalescents and Bacillus-Carriers, New York State Jour. Med., 1913, xiii, 61; abstr., THE JOURNAL A. M. A., March 8, 1913, p. 783.

[9] Slack, F. H.; Arms, B. L.; Wade, E. M., and Blanchard, W. S.: Diphtheria Bacillus-Carriers in the Public Schools, THE JOURNAL A. M. A., March 19, 1910, p. 951.

[10] Lorenz, W. F., and Ravenel, M. P.: The Treatment of Bacillus-Carriers by Overriding with Staphylococcus Aureus, THE JOURNAL A. M. A., Aug. 20, 1912, p. 690.

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In twenty cases of healthy carriers treated with the spray, seven cases, or 35 per cent., showed two negative cultures before thirty days, while of twenty cases not sprayed, four cases, or 20 per cent., cleared up before sixty days—not a very encouraging showing.

Of forty-two throats treated with the spray, twelve cases, or 28.5 per cent., cleared up before thirty days.

Of forty-two throats treated without the spray, eight, or 19 per cent., cleared up before thirty days.

### CONCLUSIONS

1. The use of the spray caused no unpleasant symptoms.
2. The use of the spray did not appreciably lessen the period of quarantine.
3. The preparation and distribution of the spray entails a large amount of work if there are many cases.
4. Apparently most of the carriers do not spread the disease after sixty days from the day the disease begins.
5. Public health officials could work more effectively if they had some practical method of determining the virulence of diphtheria bacilli found in the throats of carriers.

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# THE DESIRABILITY OF EARLY DIAGNOSIS OF MENTAL DEFECT IN CHILDREN, AND MENTAL TESTS AS AN AID *

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The physician may come in various ways in contact with mental deficiency of varying degrees, and his ability to diagnose a given case will often be taxed severely unless he keeps clearly in mind the essential nature of the condition and brings to his aid all available diagnostic means.

Every physician of experience recognizes the undirected and shifting gaze, the lack of prehensile grasp and the general failure of response to external stimuli through the special senses that indicate idiocy in the infant. He may also recognize the group of symptoms that indicate some form of primary dementia.

He is, however, aware that the great majority of children that show mental abnormality are neither idiotic nor affected with any psychosis and that their condition is not even included in the well-recognized types, usually associated with mental deficiency, such as cretinism, mongolianism, hydrocephalus, microcephalus, etc. He has little assistance from the common textbooks and he must be content to explain the condition in terms of such popular phrases as "a little queer," "rather backward," "not quite like other children," or something equally indefinite. It is not at all uncommon for a physician to tell the parents of a mental defective that the difficulty will pass away at puberty, or to recommend a course of special training with a view to restoring the child to a normal condition, overlooking entirely the essential feature of the defect.

To reduce the problem to its simplest form let us emphasize the following facts:

1. Mental deficiency is a condition resulting from *physical deficiency* or impairment in the brain and nervous system which becomes manifest during the developmental periods of infancy and childhood, and is neither curable nor outgrowable, and is not to be confused with forms of pedagogic retardation from remedial causes.

2. It is not, when uncomplicated, to be confused with insanity which represents an alienation from a normal condition usually *after mental development* has been completed.

3. It may be complicated with a psychosis or epilepsy or other disorder, functional or organic, but when this is the case, the mental retardation or degeneration naturally receives secondary consideration and is usually the result of the disease, or at least, they owe their origin to a common cause.

4. It follows from the foregoing that the diagnosis of mental defect is made by comparing the reactions of the patient to his surroundings with those of the average normal child. When a person experienced in handling mental defectives is called on to diagnose a case, he immediately seeks as complete a knowledge of the history of the activities of the child as may be necessary to make the comparison clear; the less the mental defect, the more complete the history required; the reactions in the home, on the playground and in the school form the basis for diagnosis rather than symptoms observed by casual direct examination.

Thus the problem, as ordinarily presented to the physician — and it is usually the family physician who first discovers it, or is first consulted concerning the child that is "not right" mentally—is a psychologic one. Whether or not any definite pathologic condition might previously have been discernible, it goes without saying that in the great majority of cases of this kind, as presented to the physician, no definite lesion can be discovered that accounts for the mental condition—and it is the mental condition that causes his advice to be sought—and so he is at a loss for any standard by which to make his own mental picture of the case clear, to say nothing of meeting the anxious inquiries of parents and friends with a satisfactory diagnosis and prognosis, unless there is a profound or near profound idiocy or a marked psychosis. It is here that the system of measuring intelligence comes into service, and the Binet-Simon tests afford the best means so far devised for this purpose. They are rapidly serving to standardize mental retardation and defect. They represent a system of about fifty-five procedures to which the reactions of the child give the examiner as much information concerning his intelligence as the longer and more indirect methods, which even the expert must otherwise employ. While the system is entirely empirical, it is the selected result of work with normal and abnormal children during a period of twenty years. To better appreciate their *raison d'être* and their application, one should note the following basic principles involved in the child's development.

1. Psychologists teach us that the evolution of the intellect, using the term in the sense of capacity for knowing, is completed in children at about 13 years of age or 15 years as a possible maximum. During the evolutionary period the child is growing in capacity month by month and year by year, more rapidly during infancy and at a lessening rate in later childhood until it ceases at the end of the period stated.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

2. It is quite evident from this that if from any cause, whether it be an inherited deficiency in germ cell potency, or toxic or traumatic influence during fetal life, infancy or early childhood, this evolution be interfered with, the child's mental capacity is lessened. The mental evolution may cease at an early period—or rather, it may never get under way, as in idiocy; or there may be a simple slowing down so that the child's capacity at any age below 13 is less than that of a normal child at the corresponding age, and its capacity at 13 (or at least 15) never increases. As the system of measuring intelligence enables the qualified examiner to determine the mental age of the child, it is obvious that if its development be retarded, the amount of retardation will be expressed by the difference between the mental age and the chronologic age, if the child is under 13, or 13 less the mental age if over 13.

As to reliability of tests it is unnecessary here to say more than that while there is considerable difference of opinion in regard to the relative value and proper age adaptation of certain particular tests, these are minor details. Goddard and Kuhlmann, who have done more work with the tests in this country than any other psychologists, as well as others, like Huey, Wallen, Towne, Terman and Childs, who have done enough to speak with authority, agree as to their general reliability.

As to the qualifications of an examiner, when the tests were introduced into this country by Goddard, there was considerable apprehension in regard to their use by any but expert psychologists. The fact is now conceded that this is not justified. I was at first inclined to share this view, but after observing the working of the system as applied methodically and thoroughly to over 1,500 mental defectives and on over 1,000 schoolchildren (by Kuhlmann and under his direction), and after observing the work of different teachers under training in the use of the system, I have become convinced that this is unnecessary. What is more to the point, however, Goddard, Kuhlmann and other psychologists do not consider it necessary that the examiner be a trained psychologist. He should, however, have the psychologic attitude toward the child, and should be properly trained in the use of the tests and how to evaluate the reactions to them. Some people make good examiners and others do not, with the same training. Women, other things being equal, make the best. The situation is somewhat analogous to that of the constructing engineer and the operating engineer of a locomotive. The mechanism is invented and perfected by the psychologists and they have given full instructions as to its use. The examiner must learn the technic and must have the right temperament, especially the faculty of getting the full confidence of the child and securing full and free response. The psychologists can be depended on to remedy any defects discovered in the mechanism.

Already the system is being applied in many public schools, especially in the large cities, either as a regular test for special cases or for making surveys. So much for the system of measuring intelligence.

The physician, naturally conservative, not inclined to be carried away by new "fads," may properly inquire:

1. Why should our profession employ a system of measuring intelligence which at most only deals with "symptoms."

2. Assuming that it will be of service in determining intellectual levels, how is the result to be translated into definite diagnosis or prognosis; in other words, what amount of retardation indicates mental defect?

The symptoms—the functioning of a partially developed mind—are exactly what the physician is after at that point in the history of any given case when the mental tests would be called into requisition. The arresting cause, whether it be a lack of hereditary force in the germ plasm, chemical poison, sepsis, or traumatism, has done its work and the physician is studying the patient as an imperfect human product; hence, the problem is, what is to be done for this patient? What training and development is he capable of? We all know that normal children are capable of learning to act, to think, and to inhibit action, with increasing effectiveness as they increase in age and experience, and, inversely, the amount expected of a child will be proportionately less as its age approximates birth. If, then, the child passes the age of 13 with a markedly retarded mental development, this is recognized as a defect and the intellectual level at which the development stopped will in general determine the educational capacity of the child and will be expressed by his mental age, or the age of a normal child at the time when this ability is found. Thus, these "symptoms," while not pointing to any definite cause or pathologic condition, as might be the case in a type of fever, are an index of the condition that must be known to suggest the treatment and training to be employed.

The next question, as to how much retardation constitutes mental defect, while not answerable with scientific accuracy, does not leave a margin of uncertainty that invalidates the general usefulness of the examinations. Suppose we say arbitrarily that three years' retardation at 13 indicates positive mental defect, this will leave a safe margin, as less retardation usually represents incompetence. The examiner can make a very workable table for practical use based on this assumption, and intended to apply to lower ages. Suppose the retardation be three years at 13, then we may assume for practical purposes that $^3/_{13}$ is the constant factor of retardation. At 9 years the retardation would be approximately 2 $^1/_{13}$ years and at 6 years, 1 $^5/_{13}$ years, etc. If a greater retardation is found, it simply means the use of a correspondingly larger factor and a lower mental age.

Now it is not to be understood that this means of determining the retardation at any other age than the one at which the examination is made is scientifically correct. It is only a ready method of making an approximate estimate. Psychologists have not worked out the problem of the rate of the evolution or development of mind in normal children. That is, how it varies in uniformity from birth to 13, nor is it yet ascertained whether there is a definite relation between the normal rate and the retardation rate in mental defectives.

Again, we would not expect that mental retardation from traumatic and possibly other postnatal causes, would follow any rule, because the cortical areas or nerve lines affected would obviously vary greatly. As 60 per cent. to 70 per cent. of all cases of mental defect are probably hereditary, the field for the uses of the tests is not greatly limited by this fact, and they are useful, obviously in acquired cases. Some of these cases in which the cause is traumatic, will show a sudden and complete arrest of development at the time of the accident.

Now as the higher faculties are the last to develop, it is obvious in theory and verified by experience that with one or two years' retardation even, there is usually poor judgment, lack of forethought, weak inhibition in relation to appetites, and in general, lack of capacity and resistance to cope with the social and economic condi-

reaction, uttering expressions indicative of her uncertainty as to her surroundings. She seemed perplexed as to her own identity and of her relations with her family and other members of the household. At present she vaguely recalls the state of mind at that time. She directed a number of coherent questions to the maid; but, although she received positive replies, immediately repeated these questions, each time forgetting what she had asked before.

Dr. A. D. Dryfoos attended her that evening and found her in a state of marked mental confusion. This was due largely to the fact that memory for the preceding two days was so defective that she was almost completely amnesic. Her mental processes were otherwise normal, though she was highly emotional, but controlled herself fairly well and her responses were intelligent, and thought and ideation but very slightly disturbed. In this, the psychopathologic state had two distinct components.

The doctor had occasion to speak to her about the experiences of the past summer and learned that she had forgotten the greater part of them; also that the events of the previous forty-eight hours had been apparently entirely effaced from her mind. Although she had spent the greater part of the summer at Delaware Water Gap, the name was only vaguely recalled and not associated with any experiences of her own. She could not recall that she had been in school that day, and did not recognize members of her own family, or remember the name of the maid. The temperature was not abnormal.

On the following morning Miss M. arose feeling in splendid health physically and with less mental confusion, although her memory had not been restored. That evening, when I first saw her, she had a temperature of 105. Though her mind was clear, she could not recall the events of the past two days.

The next day, the 11th, there was distinct splenic enlargement and a dichrotic pulse. An examination of the blood by Dr. Dryfoos disclosed the malarial plasmodium in numbers. The history of the case from this time was a typical tertian rise in temperature and general malaise. On these days there was marked mental confusion preceding the rise in temperature by some hours, though the amnesia was continuous long after all malarial symptoms disappeared, and even at present there is only partial restoration. The prodromal symptoms of two days' duration were characterized by partial amnesia.

These amnesias are doubtless true functional conditions, though directly of toxic origin. The case of Professor A. conclusively establishes that. The dissociation in his case was manifestly a functional one; the working of the subconscious was well shown at the moment when the patient arose to go to the telephone at the proper time to postpone an engagement which he had arranged for. Conscious or cognitive memory was suspended. We see allied states in hypnosis and in induced subconscious states.

In the case of Miss M., as in that of Professor A., dissociation was preceded by emotional upheaval. In the one case, the malarial toxin was the directly exciting factor of the dissociation, and in the other, tobacco played this rôle.

In these cases, just what significance the psychanalyst would attach to the experiences that shortly preceded the psychic symptoms, I shall not here discuss. There was effort at suppression. This is hardly relevant, however, and the dissociation can doubtless be fairly attributed to the toxic action of the exogenic poisons.

In the case of Miss M., the patient was seen by a qualified internist who regarded the case as one of typhoid, and I too was at first so impressed. The initial psychic symptoms, though of an unusual character, taken with the splenic enlargement, dicrotic pulse, high temperature and some tympanites, certainly suggested typhoid; the onset of high temperature and the symptoms just mentioned seemed to justify this; only the demonstrated presence of plasmodium made the diagnosis clear. Because of the personal history of the patient's mother, and also because of the personally more or less neurotic temperament of the patient, the essential psychic symptoms being of an emotional nature, the possibility of epilepsy or hysteroepilepsy was to be considered. To my mind this case is an extremely instructive one, especially to the internist.

Many authors describe initial delirium without fever in some of the infectious diseases, though I have not found amnesia observed as a dominant symptom. It is a question, of course, whether these psychic symptoms are due directly to the toxins or to certain changes produced by the micro-organism itself, such as multiple emboli, etc. The true infection delirium psychoses are regarded as arising from the specific toxins of typhoid, malaria, small-pox and rabies, since they are quite independent of pyrexia. In malaria, the characteristic psychosis which initiates the disease, replacing at first the fever, manifests itself in confusion, flight of ideas, hallucinations, anxiety, evanescent delusions and impulsive movements. It occurs most frequently with the quartan type.

According to some writers, the usual initial delirium of typhoid is of distinct character. It may be like that seen in malaria, or one attended by distinct and formulated persecutory delusions and by hallucinations. Amnesia is not mentioned in the cases I have seen recorded. I believe that when the usual malarial manifestations are represented by the psychic equivalent, we find a neuropathic soil.

Perointzky's findings in pernicious forms of malaria indicate the organic changes that the toxin can produce in the central nervous system. In the cerebrum and cerebellum there are marked hyperemia of the pia vessels, subarachnoid perivascular and pericellular spaces, and obstruction of the capillaries, their endothelium being swollen with masses of changed red blood-cells which slowly pass through the capillaries owing to their increase in size and decrease in elasticity, temporarily causing complete thrombosis. These circulatory disturbances lead to punctiform hemorrhages in the gray matter and at the boundary of the white brain substance and to degenerative and necrotic processes in the brain-cells. According to some writers, the cerebral symptoms are due to capillary emboli formed by parasites, as well as to the action of toxins.

Six cases of motor aphasia are reported by Mine, and Borne reports a case of trismus and one of tetany which he ascribes to the toxic action of the tertian malarial type. Bulbar symptoms are described and one case of left hypoglossus paresis, dysarthria and ataxia of the left arm. A severe case of isolated motor aphasia as a sequel to malaria in a European resident of East Africa is reported. Temporary aphasia followed each attack of the malarial paroxysm and, although the latter subsided in the course of time, the aphasia persisted. A malaria parasite thrombosis, or an embolism in the brain capillaries is assumed, producing a permanent lesion.

That the malarial toxin can give rise to disturbances in an interim during which no parasites or other malarial manifestations are evident and show a peculiarly selective site, is shown by the case described by Forli. The patient had suffered from severe malarial infection, though free from symptoms and parasites at the time of the nervous symptoms. The case is of importance because postmalarial nervous disturbances of cerebral origin are uncommon. Other etiologic factors appear to have been excluded. The onset of vertigo, vomiting, ataxia, asthenia, muscular hypotonus and nystagmus fifteen days after the last paroxysm of malaria is referred by Forli to the specific toxin. He asserts positively that he excluded mechanical circulatory disturbances as a cause.

In severe cases of malarial infection, during the Spanish-American War, I had occasion to examine at a later date some psychic manifestations that were evidently equivalents of the malarial paroxysm. These were brought to my attention during my service as U. S. examining surgeon. In those cases, as I recall them, maniacal states of weeks' or several months' duration characterized the picture. I remember that the intellectual faculties, according to histories given, were much disturbed, though the patient could give a fairly clear account of his condition after recovery.

Regis, on the other hand, says that the psychic disrbances noted in the cases of chronic malarial infection followed by amnesia; he also finds mania the preminant state. According to the same author, the psychic disturbances during the usual attacks of the malarial plasmodium actively resemble those of acute alcoholism, while the psychic phenomena of the interval are analogous to those of the chronic form.

As is well known, malarial manifestations, like those of syphilis, are prone to appear at times when there is reduction of resistance in the economy. For example, the accoucheur is often confronted with the characteristic pyrexia, etc., in women who have suffered previously with malaria. There is a depletion of the system incidental to childbearing. Again, symptoms of malarial origin obstruct the clinical picture, often after traumas, and this is especially true in regard to severe traumas of the central nervous system.

In several of the cases which I saw after the Spanish-American War in which there were profound psychic disturbances, postmalarial, there was a head trauma as a direct etiologic factor. Literature affords instances of cases of similar nature; but a review of literature indicates the paucity of recorded cases of true amnesia either in nicotin poisoning or in malarial infection.

The case of Professor A. is most unusual, and that of Miss M., if regarded as a prodromal stage of malaria, is rarer. The symptoms of tobacco intoxication, or of its essential oil, nicotin, are variously described. I shall deal only with its effects on the nervous system and, more particularly, with psychic manifestations. A pure amnesia, as in the case of Professor A., I have been unable to find described.

Experimental investigations on the effect of nicotin in the lower animals have led to positive findings in the nervous system. Vas fed rabbits for a prolonged period with increasing doses of nicotin up to 2½ grains daily. He found hemoglobin diminished in six weeks to 40 per cent., with red cells proportionately decreased, body-weight and alkalinity of blood diminished. Histologically, marked cell changes in the nervous system were demonstrated in the anterior horns, spinal and sympathetic ganglia. These findings fairly represent those generally described.

In general the familiar functional symptoms in man are sensation of pressure in the head, vertigo, somnolence, disturbed capacity for intellectual effort, abnormal moods, amblyopic symptoms, neuralgia and mydriasis, uncertainty of movement, a form of ataxia, tremor, muscular contractions, irregularity of heart action, or palpitation, emaciation, etc. I have seen bradycardia. Hyperesthesia of the acoustic is described. Aboulia, semistuporous states, insomnia, failure of memory, transitory aphasia, disturbance of judgment and agoraphobia are frequently recorded in cases of tobacco poisoning.

As to the phobias occasionally referred to as the result of tobacco intoxication, I have under observation two cases that are illuminating. Mr. H. W., after very excessive indulgence for some years, with a sudden marked increase in the daily number of cigarettes, was seized with palpitation, irregularity of heart action and precordial distress. He is a young man of about 30 and of neuropathic constitution. Withdrawal of the tobacco and rest restored him in a few weeks. On going out for the first time after his attack, he was seized with the common fear on crossing the street and soon developed the morbid apprehension characteristic of agoraphobia. One would be strongly inclined to attribute this solely to tobacco and I do not doubt that the nicotin was an exciting factor in the neurosis; but this fear neurosis continued although the nicotin had been entirely given up. Two years later I saw the patient, and psychanalysis gave the direct though remote etiologic factor, a suppressed psychic trauma. The patient recovered almost immediately through treatment by familiar psychic methods.

The aphasias are usually of a transitory character, coming on in attacks lasting from fifteen to thirty minutes, and are characterized particularly by the forgetting of names. A prolonged motor or sensory aphasia, not explained by other more evident causes, is not described.

A true and characteristic psychosis, having origin in tobacco intoxication, is fairly well established. Competent authors, such as Kjellberg, Schwartz, Frankl-Hochwart and others have observed it. Kjellberg speaks of a primary paranoid psychosis observed at the Upsala Asylum. The similarity of the symptoms points to a common etiology; they were observed only in very excessive users of tobacco. Whether or not this true psychosis can be unquestionably attributed to nicotin poisoning as a sole etiologic factor is perhaps open to question. Since, however, certain definite forms of functional psychic symptoms may be with certainty ascribed to nicotin, it is but reasonable that especially susceptible individuals, those intolerant by reason of neuropathic predisposition, should become more seriously affected by excessive and constant use of the poison. It is to be observed that the true psychosis described is invariably found in excessive and prolonged users of tobacco, and among these only when there is an unusual physical or mental strain, such as intense emotion and acute intensity in the use of the weed. The characteristic psychologic features may be divided into three stages, and these seem to be quite distinct from the various neurasthenic symptoms of nicotin poisoning. Kjellberg and Frankl-Hochwart seem to have made similar observations, and scattered through the literature are the reports of cases fitting into the groups as defined by these authors.

The patient experiences distressing sensations of weakness and incapacity for effort, and true hallucinations and suicidal tendencies follow. A prodromal stage initiates this nicotinosis mentalis and is succeeded by three distinct periods unless it terminates promptly in recovery. The prodromal stage is the one which should be recognized if the patient is to be spared a long period of mental anguish. These initial manifestations consist of general and apparently unaccountable wretchedness. There is change of disposition, and restlessness at night, finally becoming obstinate insomnia. The patient suddenly finds his work distasteful, although he struggles on; there is tendency to brood, and often to turn to thoughts of religion which later form the basis of illusions and pathologic imagery. The insomnia and psychic depression increase temporarily, and attacks of precordial distress with palpitation appear. At the end of from six weeks to three months the actual psychosis abruptly manifests itself. The patient is dominated by hallucinations; visions of a religious character appear; there are imperative concepts and fixed ideas, often associated with suicidal tendencies. There is marked depression; a feeling of great weariness and exhaustion. There are brief attacks of indefinite fear, during which acts of violence may be committed; otherwise, the patient is quiet and obedient. He speaks only on request, but gives reasonable answers to questions. Nutrition is maintained and the appetite is good. After six or seven months recovery begins, or the disease enters into a new stage. The depression changes to a state of exaltation. The patient speaks freely of what he describes as visions, such as visits of angels and other visual and auditory hallucinations. These periods usually last from two to three weeks with indefinite intervals during which the patient is discontented and gloomy and his hallucinations take a depressing form, although the patient speaks distinctly and otherwise intelligently. This stage may extend over an indefinite period; unless recovery ensues it passes into the third, the terminal stage of the disease. In this last phase of the nicotin psychosis there is a blending of the symptoms. The periods of euphoria gradually subside; the patient's mentality becomes blurred and seriously impaired. There are defects of memory, though the patient does not become indifferent to his surroundings. He becomes taciturn, speaks only on urgent request; his answers are brief, but now not always logical, though distinct and well articulated. The expression is vacant, and often there is rapid, compulsory movement.

The prognosis may be said to be favorable when the patient comes under treatment in the incipient stage and is entirely deprived of tobacco. A cure is then said to result within six months. Some authorities regard recovery as almost certain in the second stage, though a year may elapse before the pathologic periods disappear entirely.

Kjellberg knew of no instance of recovery from the third stage.

Frankl-Hochwart and others establish a remarkable number and variety of relations between the abuse of nicotin and nervous complexes not heretofore ascribed to this etiology, such as disturbances of apparently meningeal character, as well as aphasia, hemiparesis and intense and persistent neuralgia. Intermittent claudication, together with the classic nervous sequelae of nicotin abuse are included in what is described as the spinal-peripheral type. With special reference to the cerebral form, there is noted, among very excessive smokers, a premature mental weakness, a kind of senility, at an age around 50 when such changes are infrequent. There is no extreme dementia, but rather a certain reduction of the mental horizon and a distinct decrease of energy. These conditions seem to constitute a transition to the true tobacco psychosis. True disturbances of consciousness are uncommon, though a peculiar clouding of the intellect, lasting for a few moments, is described. Distressing failure of memory is recorded, while in some cases purely neurasthenic absence of mind was noted. For example: a physician, a healthy man of 31, whose first attempt at smoking began at 5 years of age and who finally became a very excessive smoker, noted suddenly, in his twenty-eighth year, that his memory for names became very deficient and he developed a tremor. The symptoms disappeared with a reduction of the quantity of cigarettes, to appear again immediately when the allowance of cigarettes was increased.

Frankl-Hochwart cites the case of a physician aged 40, also a great smoker of cigarettes, whose memory had become so defective as to lead to the commission of serious errors in practice. With the discontinuation of tobacco, a permanent cure was effected in a few months.

Some writers observe that memory defects, in greater or less degree, are likely to persist even after the disappearance of other manifestations.

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# A CASE OF APPARENT FOOD-POISONING OF THE TYPE KNOWN AS BOTULISM OR ALLANTIASIS

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Food-poisoning of a narcotic type must be rare as compared with the form familiarly associated with the term ptomain. Intense pain, violent vomiting, and exhausting diarrhea—frequently attended with high fever—are the usual symptoms. Strongly contrasted with these relatively common cases are those in which there is little or no pain, no significant temperature, but a profound complex of disturbances affecting the higher nerve-centers. In a few instances a picture like this has been observed where the offending food was the mussel, a mollusc believed to develop a specific poison, mytilotoxin, under the influence of certain organisms.

Sausage-poisoning, botulism, or allantiasis is another intoxication following the eating of protein food decomposed by *Bacillus botulinus*. A few hundred cases have been recorded with mortality approaching 40 per cent. Sausage has been the cause of the great majority, but other articles of diet have been implicated. The following personal experience may be worth transcribing because of its close resemblance to Sheppard's cases[1] and because little has been said of the protracted convalescence after such attacks.

Monday, May 5, 1913, I went to lunch with two friends at a first-class restaurant. The meal consisted of minced chicken on toast, mashed potato, and coffee-jelly with whipped cream. My friends did not eat these dishes. I left the restaurant about 1:45 and returned to Simmons College, where I conducted a recitation in the period between 2:35 and 3:25. During this exercise I became conscious of a growing inertia. In the final ten minutes I held myself to my task with extreme difficulty. After a momentary sensation of flushing, I

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[1] Bolduan: Food-Poisoning, Treat and Co., New York, 1909, Chapter 3. The cases may be briefly recalled. Three young men camping in California ate canned pork and beans. In eighteen hours they became ill and all died on the fourth day. Confusion of vision was the earliest symptom, which was soon followed by aphonia, dysphagia, and distressing accumulations of mucus in the pharynx. Muscular power failed steadily and breathing became difficult. Exertion greatly accelerated the heart. The temperature was normal or subnormal. Constipation was stubborn but there was a fair secretion of urine. To the last the mental condition was notably clear. Some of this poisonous food, given to chickens, killed nine out of twelve of those eating it.

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SATURDAY, DECEMBER 27, 1913

On account of the large amount of space occupied by the index in this issue of The Journal, certain departments have been omitted entirely and others abbreviated.

THE INDEX

This issue of the The Journal contains the index to rrent, or sixty-first, volume of The Journal, the current medical literature which has been om week to week. The Index contains references to original articles in over two hundred of the leading medical journals of the world, including those of the principal foreign countries.

The Index consists of two parts — an author and a subject index. Under "Authors" appear the names of all who have contributed articles to The Journal or to any other medical journal listed in the current literature, as well as the names of those whose papers are abstracted in the medical society reports in The Journal. Under "Subjects" will be found complete references to all reading-matter in The Journal and references to the original articles in all domestic and foreign journals listed, arranged under the subject of the article with double entry when necessary and with numerous cross-references to facilitate the use of the Index. The figures in bold-faced type refer to reading-matter in The Journal.

The "Guide to Current Medical Literature," under which title the Index appears in pamphlet form,[1] contains, in addition, the titles of the articles listed, arranged chronologically and by journals, as in the Current Medical Literature Department. It is issued in separate form for convenience—to make it unnecessary to handle the bound volume of The Journal.

Just preceding the Index a list of the journals indexed during the past six months is given. Any foreign journal, except those starred, will be lent by The Journal to subscribers and members in the United States with the understanding that it will not be held over three days. Requests for journals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. The addresses of the domestic journals are given, and these can be obtained direct from the publishers. No domestic journal will be lent, as these can be obtained direct from the publishers as easily and as quickly as from us.

THE GROWTH OF MEDICAL LITERATURE

In his introductory address before the annual meeting of the German Congress for Internal Medicine for 1913, Penzoldt of Erlangen offered some sound and timely advice relating to the situations created by the enormous growth of medical literature in recent years.[1] This eminent German teacher, while expressing his regret at the growing dispersion of internal medicine into a galaxy of medical "specialties" with its danger of depriving the physician of the coming decade of the helpful point of view which comes from a more comprehensive and synthetic treatment of the manifestations of disease, frankly admits that we cannot stem the tide of the prevailing tendency. One way of modifying it is to direct attention to some of the contributory influences. Among these the tremendous multiplication of published records, contributions and reviews in the field of medicine has made it necessary for the individual to confine his attention to special groups, if he would master even a modicum of what the printing-presses turn out.

How shall one account for this excessive zeal in publication? In a lecture before the Royal Institution in London, Dr. Plummer[2] bemoaned the floods of work that are being poured into journals, annals, proceedings, etc., some of it of the best, with much of it that is temporary, indifferent and bad; so that at times it seems as if some branches of science were in danger of being "smothered in the dust of its own workshop, or drowned in the waters of its own activity." We do not, nowadays, he adds, keep our ideas and scraps of work to ourselves until they are either established, or, as is more likely, dissipated; so we have a huge mass of what is called "literature," filled with many trivial, fragmentary and doubtful generalizations, many of which we have with pain and trouble to sweep into the dust-bin, Nature's blessed mortmain law taking too long to act.

It is, however, of little avail to inveigh against the current practices. We must analyze the cause of the excessive zeal for publication. Penzoldt has well said that every good physician must be an industrious investigator, for each patient brings new problems; but it is by no means essential that every detail in his modest, quiet field of research be thrust into public print. Fortunately, it is not the hope of direct monetary reward or compensation, but rather a natural, justifiable ambition and a healthy competition that calls forth the literary effort of medical men in most instances. We cannot impugn such honorable motives; nevertheless the time has come to call a halt on the endless enumeration of case histories and all of the other manifold features which characterize the ordinary contributions to the medical journals of the present day. There ought to be a wider inculcation of the principle that the index of accomplishment in the individual is not the number or diversity or prompt succession of his contributions, but rather their comprehensive spirit and fundamental excellence. If the publications of the medical profession were subjected to the same intensive and rigid critique that is applied in some other departments of literary effort, the volume of hasty output, of incomplete evidence, of uncorrelated findings and unjustified generalizations would become smaller.

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[1] The Guide to Current Medical Literature may be obtained from the Association office at 50 cents a copy.

[1] Penzoldt, F.: Verhandl. d. Kong. f. inn. Med., 1913, xxx, 1.

[2] Plummer, H. G.: Blood Parasites, Science, Nov. 21, 1913, p. 724.

Not alone the competition among men, but also the rivalry of journals contributes to the perpetuation of the habit of unnecessary publication. The manuscript which a critical editor with high standards of excellence rejects or advises to be modified — often to the obvious ultimate benefit of the author as well as the science involved — speedily finds its way, not into the waste-basket, but into another of the almost endless number of medical journals competing for professional favor.

Sooner or later a policy of frank, unrelenting editorial scrutiny must be adopted on a broad scale in medical journalism and scientific publications in general. The beginnings have scarcely been ventured as yet; but when a real quality standard, unyielding to the individual, unconscious of personal relationships and preferences and indifferent to offhand criticism, is once firmly put into practice, many of the abuses will remedy themselves and much of the surplus of worthless trivialities will be eliminated by a healthy growth of sentiment favorable to an abridgment of the current flood of papers. Then, in turn, the field of medical research will appear more homogeneous and be more easily surveyed than it is at present.

## THE PRODUCTION OF ANIMAL HEAT

Since Rubner's fundamental experiments[1] in relation to the long-standing problem of the source of animal heat, the conclusions which he reached regarding the equivalence of the heat actually produced in the animal body and the amount computed from the catabolism have been verified by others. Most important among these corroboratory studies, which demonstrated that the law of the conservation of energy finds a strict application in the animal body as well as in the inanimate world about us, are the widely known researches of Atwater and Benedict,[2] which established beyond a reasonable doubt that in man as well as in the carnivora the same equivalences between chemical energy, heat energy and mechanical energy obtain as elsewhere.

Although there is no reason to believe that the fundamental nutritive processes in herbivora are essentially different from those which exist in the carnivora and omnivora, the character of their digestive processes, involving as they do quite distinct types of foods along with the pronounced participation of bacterial activities, has always made direct investigations on herbivorous animals, and particularly on ruminants, appear desirable. It must be borne in mind that this group of animals experiences extensive fermentation of carbohydrates, especially in the capacious first stomach, with the production of large amounts of carbon dioxid, methane and sometimes hydrogen. Furthermore, the urinary end-products are also distinctive, including, in addition to hippuric acid, notable quantities of ammonia and more or less organic matter of unknown nature.

For some years the desired experiments have been conducted at the Institute of Animal Nutrition of the Pennsylvania State College under the leadership of H. P. Armsby. Few who have not engaged in comparable experimental work can realize the numerous sources of error and appreciate the necessary precautions which such undertakings entail. It is gratifying to note, therefore, that a total of fifty-seven experiments conducted in the past ten years have verified the expected result. The differences between the calculated and observed heat production in twenty-four hours in the total of all these numerous trials is only 0.4 per cent.—truly a close agreement.[3] The outcome is a credit to American science. It has an importance in its economic aspect as well as from a physiologic point of view. Agricultural animals are transformers of chemical energy, storing up portions of it in forms available for man's nutrition. The fundamental laws governing these transformations have now been firmly established, thanks to the energy of our American workers and the liberality with which their researches have been endowed.

## SUNLIGHT AND ORGANIC SYNTHESIS

Our English scientific colleagues, apparently mindful of the dictum that the goal of science is nothing short of the complete interpretation of the universe, have of late been busily and almost acrimoniously engaged in a discussion of the origin of life. Few of us who are absorbed in the busy occupations of an eminently practical profession stop to consider what must be, or have been, "the first stage in the evolution of organic from inorganic matter at the dawning of life in a world hitherto devoid of anything organic."[1] When, however, the possibilities of this first primeval step are presented in terms of simple reactions which all of us can appreciate, the pleasure of speculation finds ready devotees in the members of the medical profession; for when one, like a physician, is dealing day after day with the behavior of protoplasm in both its normal and its pathologic manifestations, he is likely at some time in a moment of exalted inspiration to ask himself some of these fundamental questions as to its origin.

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[1] Rubner, M.: Ztschr. f. Biol., 1894, xxx, 73.

[2] Atwater, W. O., and Benedict, F. G.: U. S. Dept. Agriculture, Office of Expt. Stations, Bulls. 109 and 136; Mem. Nat. Acad. Sc., viii, 1235. For herbivora see also Laulanie: Arch. de physiol. norm. et path., 1898, p. 748.

[3] Armsby, H. P.: A Comparison of the Observed and Computed Heat Production of Cattle, Jour. Am. Chem. Soc., 1913, xxxv, 1794.

[1] Speculations in this field are presented in an entertaining way by Moore, B.: The Origin and Nature of Life, Williams and Norgate, London, 1912.

In the vegetable kingdom we already recognize in chlorophyl, the green coloring-matter of plants, a substance capable of acting as a transformer of light-energy whereby the synthesis of organic from inorganic matter takes place. The distinguished chemist Baeyer long ago suggested that the initial stage in the synthesis of organic from inorganic matter by the green plant consists in a reaction of such simple compounds as carbon dioxid and water to produce formaldehyd and oxygen:

$$CO_2 + H_2O \rightarrow H \cdot CHO + O_2$$

The external energy which is necessary in any such transformation, because the reacting substances — carbon dioxid and water — are fully oxidized and must be reduced with evolution of oxygen and uptake of energy in what is termed an endothermic reaction, can be supplied from the energy of light vibrations. The formaldehyd is actually known to be thus formed; but in view of its toxicity it does not accumulate as such in the plant, being rapidly converted into more complex substances — possibly to carbohydrates.

Chlorophyl and its analogues are themselves highly complex organic substances and merely serve to push the inquiry a step backward. It has been necessary to search for processes in which the beginnings shall be confined solely to reactions in the inorganic world, under conditions which might exist in the world we know. The first successful attempts have consisted in the production of organic substances by the action of light on purely inorganic substances.[2] Moore and Webster,[3] in London, have now succeeded in inducing such synthesis of organic matter (aldehyd) in the presence of inorganic colloidal uranic and ferric hydroxids in very dilute solutions, the latter acting as catalysts for light-energy just as does the chlorophyl of the green plant. These inorganic catalysts are not rare, and in the words of the English biochemists, "such a synthesis occurring in nature probably forms the first step in the origin of life."

The process of evolution of simple organic substances thus having been demonstrated in an environment of sunlight and simple inorganic compounds, we can more readily picture the subsequent steps in which derivatives of more complex organic nature would arise from these with additional uptake of energy; but at this point we fancy some one asking, How about the production of the living from the lifeless organic matter? To this we must answer that there is mystery enough in the domain of medicine without attempting for the moment to penetrate into such ultimate secrets.

# Current Comment

## THE READY RECKONER FOR THE BUSY DOCTOR

The day has not yet passed when the nostrum and proprietary manufacturer presumes to act as postgraduate instructor to the doctor—especially to the one who is not up in modern medicine. Happily, this kind of postgraduate instruction is not so common as it was eight or ten years ago, before the Council on Pharmacy and Chemistry began its work. The latest advertising scheme of this kind comes from the promoter of a "blood-stimulating" preparation (Hemaboloids, Arseniated [with Strychnia]), and is in the form of a ready reckoner for the diagnosis of pathologic sputum. The thing consists of a revolving arrow surrounded by circles containing illustrations of bacteria such as no human eye ever saw through a microscope. The physician, apparently, is expected to point the arrow to that field which resembles what he sees, or thinks he sees, in the microscope, and then, through a window in the tail of the arrow, observe the name of the organism and the disease which it produces. The device is of no value, of course, to the man who cannot tell one end of a microscope from the other; to the man who does know something, even a little bit, of bacteriology, it will appear either as an insult or a joke; in either case, after spinning the arrow once or twice, he will consign it to the waste-basket. It is hoped that there is no physician to-day so lacking in knowledge as to see any value in such a ready reckoner, so wanting in professional self-respect as to post the badge of the nostrum-promoter on his walls or so servile in spirit as to prescribe the nostrum on the basis of pseudoscientific literature provided by its manufacturer.

## THE MARRIAGE LAW IN WISCONSIN

At the last session of the Wisconsin legislature an amendment to the marriage law of the state was adopted, providing that all male persons making application for a license to marry shall within fifteen days prior to such application be examined as to the existence or non-existence of any venereal diseases. It is further required that the certificate of the physician making the examination shall show "that such a person is free from acquired venereal diseases so nearly as can be determined by physical examination and by the application of the recognized clinical and laboratory tests of scientific search." It also provides that physicians making such examinations shall be duly licensed to practice and shall be of a good moral character and scientific attainments and not less than thirty years of age. For the examination and certificate the physician is to be paid a fee by the applicant not to exceed $3. If the applicant is indigent, the examination may be made by the county physician without charge. The law further provides that "any physician who shall knowingly and wilfully make any false statements in the certificate . . . shall be guilty of perjury . . . and a conviction under this subsection shall revoke the license of such a physician to practice in this state." Physicians are thus expected to furnish certificates, knowing that any false statement therein will put in jeopardy their right to practice medicine and to earn a professional income in the state. The physicians of the state were active in securing the adoption of this law. It is safe to say that 95 per cent. of the medical profession of Wisconsin are in favor of the principle of the legal restriction of marriage to those who are physically fit to enter into such a contract. Nevertheless, strenuous opposition has arisen against the enforcement of the law among members of the medical profession. The Milwaukee Medical Society has taken a definite stand against it and its members have been quoted as saying that they will refuse to furnish certificates. Unfortunately, the first statement which appeared was simply that physicians objected because the fee of $3 was not satisfactory. Newspapers throughout the state have consequently described the situation as a "strike of physicians" for higher compensation. When the situation is understood it is seen to be entirely different from that presented by this statement. The law requires that physicians making such examinations must apply "recognized clinical and laboratory tests of scientific search." Such an examination would involve not only a physical examination of the applicant but also a microscopic examination for the detection of gonococci and a Wassermann test for syphilis. The making of these examinations requires an elaborate laboratory equipment so expensive that few physicians possess it. The customary fee for a Wassermann test alone is from ten to twenty-five dollars. Even the large commercial laboratories specially equipped for such work and making many such examinations daily charge a fee of $5. Certainly this amount must be recognized as the smallest sum for which such an examination can fairly be made. A conscientious examination for the detection of gonorrhea should also entitle the examiner to an adequate fee. Yet this law provides that physicians shall make both of these examinations as well as a physical examination for $3. This is not only absurd, but also unfair and inequitable. It places on the medical profession the financial burden of enforcing a law made solely for the public good. Physicians are required to furnish certificates and if such certificates are inaccurate, the physician's professional standing is forfeited. It is highly desirable that unfit persons or persons with communicable diseases should be debarred from marriage. Such laws are for the public good and the state should provide for their enforcement at the expense of the entire public and not at the expense of a small portion of it. If the state, for the benefit of society and future generations, sees fit to require an expensive examination as a condition for marriage, then the state should provide the means and the men by which such an examination shall be made.

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[2] Usher and Priestley: Proc. Roy. Soc. London, 1906, B, lxxvii, 369; lxxviii, 322.

[3] Moore, B., and Webster, T. A.: Synthesis by Sunlight in Relationship to the Origin of Life; Synthesis of Formaldehyd from Carbon Dioxid and Water by Inorganic Colloids Acting as Transformers of Light Energy, Proc. Roy. Soc. London, 1913, B, lxxxvii, 163.

# Medical News

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## COLORADO

**Antityphoid Inoculation of National Guard.**—The general order of inoculation of members of the National Guard, now on strike duty in and around Trinidad, to guard against typhoid fever, was put into effect December 5.

**County Hospital Appointments.**—The advisory board has announced the staff for the Denver City and County Hospital for the year beginning December 1: Drs. James M. Perkins, Aubrey H. Williams and Orville D. Wescott, all of Denver, make up the board and the staff is composed of Denver physicians who give their services to the hospital.

**Conference Regarding Denver Insane.**—The overcrowded condition of the insane ward in the Denver State and County Hospital and the refusal of the state to accept patients in the state hospital caused a clash and a threatened suit between Denver and the state. The conference between Mayor James M. Perkins and Governor Ammons was followed by a promise of relief for the overcrowded ward.

## CONNECTICUT

**New Officers.**—Bridgeport Medical Society, December 2: president, Dr. J. Murray Johnson; secretary, Dr. George H. Warner.

**Hospital News.**—A fire in the Hartford Hospital, December 11, necessitated the removal of forty-two patients from one ward. No casualties occurred and the fire was quickly extinguished.——The work on the new Association Service Hospital, New Haven, will begin about February 1.

## ILLINOIS

**Personal.**—Dr. Nelson C. Phillips, Freeport, has been appointed deputy coroner in Stephenson County, vice Dr. H. E. Morrison resigned.——Dr. Walter L. Hogland, Peoria, has been elected physician of Peoria County.

**New Officers.**—Kankakee County Medical Society at Kankakee, December 11: president, Dr. George H. Lee; secretary, Dr. Charles F. Smith, both of Kankakee.——Morgan County Medical Society at Jacksonville, December 11: president, Dr. Alfred J. Ogram; secretary, Dr. George H. Stacy, both of Jacksonville.——Twin City Peru-La Salle Medical Society at Peru, December 9: president, Dr. Bert E. Fahrney; secretary, Dr. Frederick A. Guthrie, both of La Salle.

## IOWA

**Work of the State Board.**—Dr. Walter L. Bierring, president, and Dr. Guilford H. Sumner, secretary, of the State Board of Health, announce to the people of the state that the plan of work outlined by the board contemplates a sanitary investigation of every city and town line, including inspection of all public water-supplies, sewage-disposal plants and means of garbage disposal.

**Reporting of Venereal Diseases.**—Under the terms of the "black plague" law passed by the last general assembly, which goes into operation January 1, blanks have been prepared by the State Board of Health to be sent out to the physicians of the state for reports of venereal diseases. According to the law, venereal diseases are declared contagious and infectious and physicians are required to report all cases coming under their notice within twenty-four hours after discovery.

## KANSAS

**Sanatorium Nearly Ready.**—It is announced that the State Tuberculosis Sanatorium, Norton, will be ready to receive patients early in January although the entire building will not be complete until summer.

**Hygienic Teacher in Public Schools.**—The Atchison Board of Education has voted to employ a teacher of hygiene in the public schools. The teacher will be a trained nurse who will instruct the various teachers of the staff in hygiene and will also make regular periodical examinations of the school children.

**New Officers.**—Cowley County Medical Society at Arkansas City, December 11: president, Dr. Samuel J. Guy, Winfield; secretary, Dr. Benj. C. Geeslin, Arkansas City.——Allen County Medical Society at Iola, December 10: president, Dr. Omar L. Cox; secretary, Dr. Frederick L. B. Leavell, both of Iola.——Cherokee County Medical Association at Columbus, December 8: president, Dr. Robert M. Markham, Scammon; secretary-treasurer, Dr. Earl L. Parmenter, Mineral.

## KENTUCKY

**Decision Regarding Dairies.**—A very important decision has recently been handed down by the appellate court in an opinion written by Judge Hannah which gives to boards of health power to regulate city dairies. The Covington Board of Health was restrained by the Kenton circuit court from enforcing a stringent regulation of the city dairies, one of which required milk to be transported in sealed, transparent bottles. A dairyman refused to comply with this requirement and secured the injunction. Judge Hannah in his opinion said, "We are not inclined to take the narrow view that the board powers conferred on a local board of health can be exercised only when epidemics actually exist or when the cause of sickness is such as to amount to a nuisance." The opinion further said, "the most effective way to prevent disease is to remove the cause thereof," and if the local board considered this regulation essential to the health of the community, the court would not interfere unless the regulation should appear to be "unreasonable or oppressive." The court said it was neither, and that the powers of local boards of health are not derived from the city council, but from the statutes.

## MISSISSIPPI

**County Health Officers Meet.**—The county health officers of the state held a meeting in Jackson, October 28 and 29, to perfect a permanent organization for mutual benefit and for the advancement of hygiene and sanitation. Of the seventy-seven county health officers of the state, sixty-five were in attendance. Dr. Inman W. Cooper, Newton, was elected delegate to the National Federation of State License Boards.

**New Officers.**—Lauderdale County Medical Society at Meridian, December 11: president, Dr. T. D. Bordeaux, Meridian; secretary-treasurer, Dr. Gilbert F. Douglass, Chunky.——Newton-Neshoba-Winston Tri-County Medical Society, Newton, er 9: president, Dr. Daniel J. Rush, Philadelphia; sec- asurer, Dr. Sidney A. Majure, Dixon.——Hinds- edical Association at Jackson, December 9: president, ert S. Curry, Jackson (reelected); secretary-treasurer, Dr. ames H. Fox, Asylum (reelected).——Hancock County Medical Society organized at Bay St. Louis: president, Dr. Joseph W. Moody, Prentiss; secretary-treasurer, Dr. Alphonse A. Kergosien, Fenton.

## MISSOURI

**Personal.**—Dr. Luther M. Callaway, Kansas City, has succeeded Dr. Eugene Hamilton, resigned, in the school medical inspection service.——Dr. J. B. Freeman, Sturgis, is reported to be critically ill.

**Physicians on Duty Day or Night.**—The system whereby physicians of the St. Joseph's Welfare Board may be reached at any hour of the day or night was adopted by the board at its meeting, December 8.

**Hospital Notes.**—The new hospital building being erected in Springfield is to be known as the Southwestern Missouri Hospital. The association is incorporated for $20,000 and the board of directors is made up as follows: Archibald A. Low, president; Dr. Thomas O. Klingner, vice-president; Dr. David U. Sherman, secretary and treasurer and Dr. Moses C. Stone Wellesley and George D. McDaniel.——The Sisters of the Immaculate Conception of Marysville have purchased a tract of land in Hannibal upon which a hospital will be erected at a cost of $30,000.

**New Officers.**—Polk County Medical Society at Morrisville, December 13: president, Dr. R. Lee Russell, Humansville; secretary, Dr. J. F. Roberts, Bolivar (reelected).——Green County Medical Society at Springfield, December 12: president, Dr. George B. Lemmon; secretary, Dr. Thomas O. Klingner, both of Springfield.——Marion County Medical Society at Hannibal, December 5: president, Dr. Isaac E. Hill; secretary-treasurer, Dr. John J. Farrell.—Audrain County Medical Society at Mexico, December 3: president; Dr. Fred Griffin; secretary-treasurer, Dr. Harry W. Gibbs.——St. Joseph-Buchanan-Andrew Medical Society at St. Joseph, December 3: president, J. Bansbach; secretary, Dr. William F. Goetze.—— nty Medical Society at Trenton, December 3: John M. Stone, Laredo; secretary, Dr. Ola R. ——Jackson County Medical Society at Kansas r 2: president, Dr. Richard L. Sutton; secretary the bulletin, Dr. H. Louis Hess, both of —Pike County Medical Society at Elsberry, Dr. Ezekiel M. Bartlett, Clarksville: eeling, Elsberry.

### Louis

**Medical Library.**—The medical n by his uncle of the same name has been devised to the Worcester (Mass.) District Medical Society in memory of his uncle.

**Dispensary to be Closed.**—The hospital board has announced that the City Dispensary, Branch Number 3, will be closed January 1, and that the physicians and attendants will be transferred to the Central Dispensary where there is more need for their services.

**Personal.**—Dr. C. W. Bassett has resigned as assistant police surgeon.——Dr. Robert E. Graul is reported to have been awarded a verdict of $6,000 damages against the United Railroad Company for injuries received in a street-car accident, March 12.——Frank E. Chapman has succeeded Dr. Wayne Smith as superintendent of the City Hospital.——Dr. Christian H. Diehl has purchased the farm on which the Shannon County Cave is located.

## NEW YORK

**New Officers.**—Dunkirk and Fredonia Medical Society at Dunkirk, December 10: president, Dr. Walter H. Vosburg; secretary-treasurer, Dr. William J. Sullivan, both of Dunkirk.——Medical Society of the County of Rensselaer at Troy, December 9: president, Dr. Hermon C. Gordinier; secretary, Dr. John J. McShane, both of Troy.——Wayne County Medical Association at Lyons, December 9: president, Dr. Ethan A. Nevin, Newkirk; secretary-treasurer, Dr. Major A. Vedder, Lyons.——Wellsville Medical Club, organized December 10: president, Dr. Francis E. Comstock; secretary-treasurer, Dr. R. M. Eaton.——Onondaga County Medical Society at Syracuse, December 9: president, Dr. I. Harris Levy; secretary, Dr. Henry B. Doust, both of Syracuse.——Rockland County Medical Society at Haverstraw, December 3: president, Dr. J. William Giles, Nyack; secretary, Dr. Ralph De Baun, Congers.

**Alienists Urge New Crime Law.**—The committee of the Bar Association on the commitment and discharge of the criminal insane, which was appointed last January, has sent to the justices of the supreme court and to the district attorneys throughout the state opinions of alienists on the advisability of a change in the laws affecting the verdicts of insanity and criminal trials. The proposed change is intended to enable juries where a defense of insanity is made to render a verdict of "guilty, but insane," rather than the present "not guilty on the ground of insanity." The plan under the new verdict is to have the defendant sentenced to a state asylum for the criminal insane "until such time as in the opinion of the governor on an application for pardon he may be set free with safety to the community." The committee states that the proposed amendment has been in operation in England for thirty years and seems to have worked well. Opinions on this proposed change have been expressed by Dr. Orville J. Wilsey of the Long Island Home at Amityville; Dr. James V. May, Albany, of the State Hospital Commission; Dr. Arthur W. Hurd, superintendent of the Buffalo State Hospital; Dr. Austin Flint and Dr. Allen McLane Hamilton of New York.

### New York City

**Preventorium Report.**—At the annual meeting of the Tuberculosis Preventorium for Children, December 5, Mr. Marcus M. Marks, president-elect of the borough of Manhattan, resigned. He announced that the institution which is located at Farmingdale, N. J., was running with smoothness and efficiency and there was a balance of $19,988 in the treasury, of which $3,000 is to be used to complete the first half of a new school building. Dr. Herman M. Biggs was elected president of the institution.

**American Museum of Safety Awards Medals.**—The annual meeting of the American Museum of Safety was held December 12. The Travelers' Insurance Medal went to the New York Telegraph Company because of the steps it had taken to protect employees, chiefly the women workers. The Louis Livingston Seaman medal, awarded for progress and achievement in the promotion of hygiene and the mitgation of occupational diseases went to the United States Steel Corporation. The General Electric Company of Schenectady received the Rathenau medal for the best device or process in the electrical industry for protecting life and health.

**Extension of the Pasteurization Provision of the New York Milk Ordinance.**—The Board of Health of New York has amended the sanitary code and rules and regulations for the sale of milk, requiring the pasteurization of Grade B milk which was formerly permitted to be sold for certain purposes without pasteurization. This extends the requirements of pasteurization to all milk now used in the city except certified milk and similar special grades. This action followed the study of an epidemic of typhoid fever in the city which was traced to Grade B milk sold in restaurants under the provisions of the ordinance which allowed such milk to be sold raw for drinking purposes only when so labeled.

**Medical Charity Faces Deficit.**—The Hospital Saturday and Sunday Association in its annual report issued December 1 states that during the fiscal year which is closed, the expense of maintenance of its forty-seven hospitals was $4,952,309, an increase of $382,441 over the year before. The receipts of the hospitals during the same period were from income $2,160,957 and from endowment $1;023.159, leaving $1,749,193 to be raised by voluntary contributions. The income of these hospitals for the last year was $18,706 less in payments from patients, $25,657 less in payments from the city for public charges and $21,890 less from endowment as compared with the year before. During the year a staff of 2,047 nurses in addition to hundreds of physicians took care of 105,669 bed patients, while in the dispensary 507,277 cases were treated with a total of 1,673,679 visits.

**Clean Milk Bottle Ordinance Sustained.**—The provision of the sanitary code of the city of New York which makes it a misdemeanor "to receive or have in possession" any receptacle used in the transportation or delivery of milk or cream which has not been washed immediately after emptying, has been sustained by the highest court of the state of New York. It has been construed as violating no constitutional right and is within the police power of the state. The duty of cleansing the receptacle is cast first on the person who empties it. If he fails to perform this duty then it extends to any person into whose possession it falls. Certain drivers of a milk company had left unwashed milk cans on the platform of a railway station and the company was prosecuted for violation of the ordinance. The case was first tried in the Court of Special Sessions and the defendant was found guilty. In two appeals to the higher courts the judgment was affirmed.

## PENNSYLVANIA

**Recent State Board Regulation.**—Under the authority given the state board by the act of assembly, approved April 27, 1905, rules and regulations have been promulgated by the board forbidding the use of common drinking cups unless boiled or disinfected after each use, forbidding the use of common towels, forbidding the use of a common brush by barbers unless disinfected after each use and providing that eating and drinking utensils in public eating places shall be thoroughly cleansed after each individual use. Impetigo contagiosa and scabies have been made reportable diseases, as has also ophthalmia neonatorum, by a separate act, approved June 5, 1913.

### Philadelphia

**To Unite City Hospitals for Efficiency.**—Representatives of fifty-five hospitals met in the office of Chief Vogelson, City Hall, on December 11, to plan the adoption of an efficiency program for the hospitals and dispensaries of the city. A $7,000 fund is to be raised for the purpose of making an "efficiency" study of the whole hospital situation. According to Mr. F. W. Leporin, an efficiency engineer of New York, the fifty-five hospitals of Philadelphia cost each year for maintenance about four million dollars, and he estimated that the efficiency plan would save these institutions about two hundred thousand dollars a year. To bring this about, which means eliminating duplication of hospital work, an efficiency engineer would be employed to outline and chart the proper organization and management of the Central Record Bureau with subdivisions covering general efficiency departments, accounting bureaus, office methodizing departments, purchase, testing, and employment bureaus. The result of his work would be the organization of a general efficiency commission which would cooperate with the several hospital efficiency committees. Dr. Joseph S. Neff, director of Public Health and Charities, presided.

## WASHINGTON

**State Board Election.**—The State Board of Medical Examiners at its meeting in North Yakima, November 30, elected the following officers: president, Dr. R. P. Smith, Seattle; vice-president, Dr. J. L. Walker, Sunnyside; secretary, Dr. Conrad N. Suttner, Walla Walla, and treasurer, Dr. A. L. Nelson, Spokane.

## WEST VIRGINIA

**Personal.**—Dr. E. W. Strickler, Fairmont, has recovered and resumed practice.——Dr. A. U. Weinberger, Wheeling, has been appointed a member of the staff of the Ohio Valley Anti-Tuberculosis League Dispensary.

**Health Officers Convene.**—The first meeting of the State and County Health Officers of West Virginia with the State Board of Health was held in Parkersburg, November 28. During the earlier part of the day a school of instruction was held and in the evening there was a general meeting at which the president and secretary of the board and others delivered addresses. The next school of instruction is to be held in Charleston in April, chiefly for the benefit of the health officers from the southern tier of counties in the state.

**State Hygiene Laboratory Established.**—At a conference between the governor and the West Virginia State Board of Health, it was decided to establish a hygienic laboratory in connection with the School of Medicine of the University of West Virginia, Morgantown. An appropriation was set aside for equipment and for salaries of the necessary laboratory men. An important feature of the laboratory will be the study and prevention of contagious diseases. Examinations will be made free of charge for physicians and health officers in case of suspected tuberculosis, diphtheria, typhoid fever, gonorrhea, anthrax, trichinosis, etc. Chemical and bacteriologic examinations of water and milk will also be made. Vaccines will be prepared and research work and classes in public health will be conducted. The officers of the board are: president, Dr. William W. Golden, Elkins; secretary, Dr. Samuel L. Jepson, Wheeling; director, Dr. John N. Simpson, Morgantown; chief pathologist and bacteriologist, Dr. Aaron Arkin; chief chemist, Dr. A. L. Whitehill, and pharmacist, Dr. W. H. Schultz.

## WISCONSIN

**Health Budget Cut.**—The Milwaukee Board of Estimates, after making a cut of $50,000 in the health department estimate for 1914, has still recommended the appropriation of $29,000 more than was asked for in 1913.

**Would Separate Inebriates, Epileptics, Idiots and Insane.**—In the biennial report of Dr. Charles Gorst, superintendent of the Mendota State Hospital for the Insane, he recommends the establishment of state homes for inebriates and a state colony for epileptics, and, furthermore, that idiots and inebriates should be confined in county institutions.

**Sanatorium News.**—By a vote of twenty to twelve, the Board of Supervisors of Sheboygan County decided against the appropriation of $25,000 for a county tuberculosis sanatorium.——The Racine County board has appropriated $12,000 a year for the support of its sanatorium known as Sunnyrest.——The Tuberculosis Sanatorium for Outagamie County was recently opened. The institution is on the river bank near Kaukauna and has accommodations for twenty-four patients with sun parlors and other requisites.

**Eugenic Marriage Law Makes Trouble.**—The marriage law which goes into effect January 1 provides that male applicants for marriage licenses be required to show health certificates showing them to be physically fit for matrimony. The law also stipulates a fee of three dollars for the necessary certificate. As this certificate includes a Wassermann test, which in itself commands a fee of from five to ten dollars, physicians are making earnest protests and many say that they will refuse to make the examinations and issue the certificates required under the law.

**Medical Aid for Traction System.**—The Milwaukee Electric Railroad and Light Company has arranged for the benefit of its employees to reorganize its medical service. Under this rearrangement, Dr. Charles H. Lemon will have charge of the central district, with headquarters in the Public Service Building; Dr. E. W. Miller will be in charge of the southern district with headquarters at the National and Kinnickinnic stations, and Dr. W. H. Owens will be in charge of the northern district with headquarters at the Farwell and Fond du Lac stations. Under this arrangement it will be possible for the employees who need medical aid to reach the physician far more promptly than under the old system.

**New Officers.**—Milwaukee County Medical Society, December 13: president, Dr. Dennis J. Hayes; secretary, Dr. Daniel Hopkinson, both of Milwaukee. The society, by vote, has refused to make the examination required by the new hygienic marriage law.——Kenosha County Medical Society at Kenosha, December 10: president, Dr. Curtis H. Gephart; secretary-treasurer, Dr. Albert J. Randall, both of Kenosha.——Dane County Medical Society at Madison, December 9: president, Dr. Thomas W. Tormey; secretary, Dr. Frank S. Meade, both of Madison.——Waukesha County Medical Society at Oconomowoc, December 5: president, Dr. Walter S. Wing, Oconomowoc; secretary-treasurer, Dr. S. Breck Ackley, Waukesha.——Racine Physicians' Business Association, December 4: president, Dr. Walter S. Haven; secretary, Dr. George W. Nott.——Wood County Medical Society at Marshfield, December 3: president, Dr. Victor A. Mason; secretary-treasurer, Dr. James B. Vedder, both of Marshfield.

## GENERAL

**Otologists to Meet at Atlantic City.**—Dr. John B. Ray, secretary of the American Otological Society, announces that the annual meeting of the organization will be held at the Hotel Chelsea, Atlantic City, N. J., May 27 and 28, 1914.

**Medical and Surgical Exhibit at Panama Exposition.**—Among the medical exhibits at the Panama Exposition in San Francisco will be a complete demonstration of the methods employed under the directorship of Col. W. C. Gorgas in the sanitation of the Canal Zone during the construction of the Panama Canal. This should prove a valuable educational feature to the physicians and sanitarians as well as to the public visiting the exposition.

**Tri-State Meeting.**—The tenth annual meeting of the Tri-State Medical Society of Arkansas, Louisiana and Texas was held in Texarkana, December 10, and the following officers were elected: president, Dr. Preston Hunt, Texarkana; vice-presidents, Drs. Joseph P. Runyan, Little Rock, Ark.; Thomas B. Allison, Redwater, Tex., and Joseph E. Knighton, Shreveport, La.; and secretary, Dr. Jacob M. Bodenheimer, Shreveport (reelected for the sixth term).

**American Medical Men of Vienna Meet.**—On November 26, the American Medical Association of Vienna celebrated Thanksgiving Day by a banquet at which Professors Lorenz, Alexander Fuchs and Politzer were the speakers representing the University of Vienna. Dr. John W. Summers, Walla Walla, Wash., presided as toastmaster. About one hundred and fifty American physicians with their wives were present, and in addition many of the American colony of Vienna.

**Ambassador Entertains.**—The American Ambassador and Mrs. Penfield gave a Thanksgiving Day banquet to Americans residing at present in Vienna. The American Medical Association of Vienna was represented at this dinner by its president, Dr. H. T. Tangeman, Cincinnati; Vice-President and Mrs. J. W. Summers, Walla Walla, Wash.; Capt. M. A. Delaney, U. S. Army, military attaché; the secretary, Dr. J. M. Myers, Chicago, and the treasurer, Dr. John J. Sullivan, Lawrence, Mass.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Medical Department of the University of Cincinnati, a bequest of $25,000 to the chair of medicine by the will of Mrs. Jeannette Moss.

Bethesda Hospital, Cincinnati, Maternity Ward, a donation of $2,000 from "an Illinois friend."

Dr. Melvin G. Overlock, Worcester, Mass., as trustee, the income of $25,000 for the anti-tuberculosis fight in Worcester and vicinity by the will of Persis G. Boynton, Worcester.

Children's Hospital, Philadelphia, $60,000, and Germantown Hospital $5,000, by the will of Mary H. Russell.

Jewish Charitable and Educational Union, St. Louis, an increased donation of $7,000 by the directors.

Philadelphia Home for Incurables, a donation of $7,500 to maintain a free bed in the cancer annex of the institution, by George W. Nevil.

## VIENNA LETTER

*(From Our Regular Correspondent)*

Vienna, Dec. 1, 1913.

### Health Statistics

An interesting report on the number of cases of infectious diseases has been published recently in connection with the new public health act. This law stipulates the payment of a sum of 50,000 kronen ($10,000) by the government to the "union of Austrian medical councils" for the purposes of old-age pensions, orphans' grants, and the like, being a recognition of the unpaid services rendered by the medical profession to the general health. It is, as it were, an equivalent to the fees for notification of infectious diseases paid in some countries. In order to divide up this sum in proportion to the services rendered, it was decided to ascertain the number of reports of such cases in the different districts. Thus, in 1910, the number of practitioners in Vienna amounted to 2,382 men. The average number of notifications of infectious cases within the last ten years made by them was 32,265; the population in 1910 was 2,004,939. In Bohemia there were 2,670 doctors, who reported 103,236 cases; the population was 6,730,000. In Tyrol, with nearly a million inhabitants, the 571 doctors reported 15,820 cases. In the whole of Austria, with a population of over 28,000,000 and 10,498 doctors, the yearly average of notifications was 421,000, or less than 2 per cent. It is interesting to note that the proportion of infectious diseases to the population is fairly constant in all districts and does not vary much all over the empire; but the work done by the doctors is much heavier in districts in which the relative frequency of infectious diseases is low (rural or mountainous districts). These districts will get a larger share of the above-mentioned sum.

### A Strike of Medical Students

The medical students in Vienna have resolved to organize a strike as a sign of their dissatisfaction with the present system of examination. Up to a short time ago the students need not fail in their studies, even if they did not pass the examinations. They were allowed to repeat the examination within from three to six months and they could also choose the year or half-year in which they wanted to be examined. Now they are obliged, by the new regulations, to pass the severe examinations in a short time within each other—most within six weeks—and if a student has permitted more than a year to lapse between his first examination (on biology and anatomy) and his last one (on gynecology and ophthalmology), he has to repeat the first-named two subjects. Also, those students who have to serve with the army are now worse off than before in several respects. The regulations come into force just now, and the students in the fourth and fifth years who have hitherto been studying on the old system, are chiefly affected by them. They tried all means to avert the difficulties but as all endeavors were useless, they organized a strike in which all students supported them. The ministry of education will have to do away with at least the worst grievances, otherwise a general prolonged standstill of the teaching may be expected.

### Infant Mortality and Stillbirths in Austria

The official figures dealing with the mortality of infants in this country show with an interesting and instructive exactness the beneficial influence of prolonged wet-nursing on the expectation of the life of children. In those districts in which it is the custom to give the babies the mother's breast, there died out of every hundred infants born alive, between 16 and 17 within the first year of life, while the figure for infants living only one month or under was between 6 and 7. In other districts where breast-feeding is soon stopped (from 1 to 5 months) the number of infants dying within twelve months was from 18 to 23, while the number of those dying in the first month of life was about the same as in other districts (from 6 to 8). The effect of mother's milk is thus clearly illustrated. The figures for the whole of Austria are 20.5 dying within the first year and 7.9 within the first month of life. All these figures are an average for the last five years. It is also significant that in districts with old customs, stillbirths were rather few. Out of a thousand births, from 9 to 15 were stillbirths, while in districts in which there are industries or where modern life has caused change of habits, the figure was from 20 up to 41 per thousand. For Austria as a whole the figure stands at 25.2. Poverty affects the death-rate only when the wife (or mother) has to earn a wage besides doing her housework, while it loses its otherwise deleterious influence on the offspring, at least for the first part of life when the mother can nurse her baby with its natural, not with artificial, food. Anyhow there is noticeable a constant decrease of the fertility of our population. Families with more than five living children under 10 years are becoming rare now. In the "large" families the youngest children are at present more than 15 years old. It is due to the difficulties of modern life which in this country have existed since about the year 1900.

### The Fight between Krankenkassen and Doctors

The conflict between the sick-clubs and their physicians has lasted now over a year and it seems that the latter will carry their own and win. As the "clubs" are bound, by law, to procure medical help for their members or to give them an equivalent for it in cash, the member paying the doctor himself, they selected the latter method, not finding enough doctors willing to work on the old terms. The clubs have discovered that the payment of the members cost them much more than they spent formerly on doctors, and such an argument on the pocket is most convincing. The doctors, however, have found out, too, that the clubs have to come to terms and now it is quite sure that their services will have to be paid for at a more remunerative scale. The principal difference now between the clubs and the doctors is the demand, by the latter, that the "black-leg" practitioners—those who have accepted appointments pronounced boycotted—should be dismissed. The clubs refuse, being bound by contracts, but the organization of the profession must keep up this demand, for future conflicts. It is quite certain that an understanding will be arrived at in a short time.

## Marriages

William Long, M.D., St. Paul, Minn., to Miss Mary Vail Tisdale of Slayton, Minn., at Minneapolis, December 10.

Louie Ethlyn Vandervoort, M.D., to Mr. Henry Martin Stegman, both of Battle Creek, Mich., November 25.

Thomas P. Fore, M.D., Brookfield, Mo., to Miss Bess Griffith of Grand Island, Neb., at Kansas City, December 8.

Thomas John Murray, New London, Conn., to Miss Helen G. O'Rourke of Waterbury, Conn., November 18.

Bedford E. Love, M.D., Roxboro, N. C., to Miss Julia Louise Cole of Danville, Va., at Roxboro, December 3.

John Edward Clark, M.D., Streator, Ill., to Miss Evelyn Meyer Brogley of Butte, Mont., December 3.

Clarence A. Peaslee, M.D., to Miss Frances D. Hobson, both of Bath, Me., in Portland, December 9.

Esick Albert Aisenstaedt, M.D., Chicago, to Miss Ethel Ferrell of Nashville, N. C., December 9.

David Earle Lowe, M.D., New Salem, Pa., to Miss Ella Brooke of Uniontown, Pa., December 12.

Roy Frederick Breeden, M.D., to Miss Marjorie Jane Marne, both of Chicago, December 9.

Herman C. Tietze, M.D., to Miss Maude O. Buxton, both of West Salem, Ill., October 29.

## Deaths

**John Giles Cecil, M.D.** Hospital College of Medicine, Louisville, 1879; one of the best known practitioners of Louisville; died at his home, December 12, from heart disease, aged 58. He was born in Monticello, Ky., the son of a wealthy planter and banker, and received his academic training at Princeton University from which he was graduated in 1876. After a service as intern in the Louisville City Hospital and an extensive postgraduate course abroad, he began practice in Louisville. Dr. Cecil was a Fellow of the American Medical Association, president of the Kentucky State Medical Association in 1907, professor of medicine in the University of Louisville and since the merger of the medical school, a member of the executive committee of the faculty and trustees. He was also medical director of the Inter-Southern Life Insurance Company and for three years had been president of the Louisville branch of the Young Men's Christian Association.

**Orlando P. S. Plummer, M.D.** Jefferson Medical College, Philadelphia, 1857; a member of the Oregon State Medical Association and one of the first telegraphers to take messages by sound; a surgeon of volunteers and army telegrapher during the Civil War; for nearly fifty years a resident of Portland, Ore.; for several years superintendent of the Pacific division of the Western Union Telegraph Company; one of the first members of the faculty and first dean of the Medical Department of Willamette University, Salem; a member of the first state board of medical examiners; for two terms a member of the state legislature and twice member of the city council of Portland; died at his home in Hillsdale, Ore., December 7, aged 77.

**Abiel Ward Nelson, M.D.** Harvard Medical School, 1861; surgeon of the Eighty-Eighth Massachusetts Volunteer Infantry during the Civil War; a member of the Connecticut State Medical Society; surgeon-general of the National Society of Mayflower Descendants; one of the organizers of the New London City and County medical societies; trustee of the Manwaring Memorial Hospital; died at his home in New London, December 6, aged 77.

**Rollin Clayton Ward, M.D.** Harvard Medical School, 1870; a member of the American Medical Association; a veteran of the Civil War; formerly a practitioner of Northfield and Shoreham, Mass., and East Orange and Princeton, N. J.; died at the home of his niece in St. Johnsbury, Vt., December 9, aged 75.

**Caleb M. Lowder, M.D.** Medical College of Indiana, Indianapolis, 1881; a member of the Indiana State Medical Association; died at his home in Dugger, Ind., December 10, from heart disease, aged 55.

**John Walter Staples, M.D.** University of Vermont, Burlington, 1880; a Fellow of the American Medical Association and once president of the New Hampshire Medical Society; a trustee of Proctor Academy, Andover, and secretary of the Daniel Webster Birthplace Association; died suddenly in his private hospital, Sanborn Hall, Franklin, N. H., December 11, from cerebral hemorrhage, aged 58.

**Zaccus Prall Boyer, M.D., Jr.** University of Pennsylvania, Philadelphia, 1881; aged 57; formerly chief surgeon for the Philadelphia and Reading Railroad and located at Pottsville, Pa.; for the last nine months a practitioner of Philadelphia; fell while descending a stairway from his office, December 6, fracturing his skull, and died before he could be taken to a hospital.

**Albert Blodgett Weymouth, M.D.** Bellevue Hospital Medical College, 1863; for many years a medical missionary of the Protestant Episcopal Church at Lahaina, Maui, Hawaii; honorary canon of St. Andrews Cathedral, Honolulu; a Fellow of the Royal Horticultural Society; died at his post in Lahaina about October 27, aged 74.

**William Mackall Wheeler, M.D.** University of Virginia, Charlottesville, 1895; Surgeon and Lieutenant Commander, U. S. N. with station at the Marine Barracks, Norfolk Navy Yard; a Fellow of the American Medical Association; died in the U. S. Naval Hospital, Washington, D. C., December 14, aged 39.

**J. T. Parker, M.D.** Medical College of South Carolina, Charleston, 1861; a Confederate veteran; formerly of Buena Vista, Miss., but since 1895 a resident of Waco, Tex.; died at the home of his daughter in the latter city, November 27, from cerebral hemorrhage, aged 76.

**Charles Stuart Murray, M.D.** Trinity Medical College, Toronto, 1873; L.R.C.S. Edinburgh, 1877; for seven years surgeon on transatlantic steamers and then for a short time a practitioner of Toronto; died at his home in that city, November 6, from pneumonia, aged 63.

**William Lewis Judkins, M.D.** University of Pennsylvania, Philadelphia, 1894; of Barnesville, O.; a member of the Ohio State Medical Association; died in Mt. Carmel Hospital, Columbus, O., from shock following an operation for ethmoiditis and meningitis, December 9, aged 45.

**Sherman Van Ness, M.D.** College of Physicians and Surgeons, New York City, 1883; of Chatham Center, N. Y.; in 1889 coroner of Columbia County; died in St. Peter's Hospital, Albany, N. Y., December 2, a week after an operation for appendicitis, aged 54.

**John H. Engles** (license, Oklahoma, 1908); said to have been a practitioner for forty-one years; died at his office in Newkirk, December 9, from the effects of a gunshot wound to the head, self-inflicted, it is believed, with suicidal intent, aged 66.

**Lyman Hall, M.D.** Drake University, Des Moines, Iowa, 1902; a member of the Iowa State Medical Society and for eighteen years a practitioner of Spring Hill, Iowa; died in Albuquerque, N. Mex., December 6, from cerebral hemorrhage, aged 44.

**Leonora Fletcher Lathe, M.D.** New England Female Medical College, Boston, 1886; for fifteen years assistant supreme medical examiner of an insurance fraternity; died at her home in Cambridge, Mass., December 5, from heart disease, aged 79.

**Irenaeus J. Atwood, M.D.** Rush Medical College, 1889; for twenty-seven years a medical missionary in Fen Chofu, Shansi, China; died in a sanatorium in Puyallup, Wash., October 1, from cerebral hemorrhage, aged 62.

**Jacob Walter Eleeza Karr Davis, M.D.** University of Buffalo, 1887; a practitioner of Omaha for twenty-six years; died suddenly in a street car in that city, December 4, from heart disease, aged 64.

**Norman Eugene Farewell, M.D.** Trinity Medical College, Toronto, 1897; assistant surgeon to the Brooklyn Eye and Ear Hospital; died at his home in Brooklyn, December 12, from pneumonia, aged 37.

**Thomas Marshall Huntington, M.D.** Bellevue Hospital Medical College, 1883; of Amesbury, Mass., was struck and killed by a freight train in the Newburyport station, December 9.

**James Franklin Leslie, M.D.** Eclectic Medical Institute, Cincinnati, 1900; of Waterville, Wash.; was killed in an automobile accident near that place, November 23, aged 42.

**Fitzwilliam Sargent Worcester, M.D.** Harvard Medical School, 1873; of Peabody, Mass.; died at the Joshua B. Thomas Hospital in that city, December 7, aged 62.

**Benjamin T. Gadd, M.D.** Eclectic Medical Institute, Cincinnati, 1865; of Mitchellville, Iowa; died at the home of his daughter in Colfax, Iowa, December 9, aged 76.

**William H. Ward** (license, California, 1894) a practitioner for fifty years; formerly of Des Moines, Iowa; died at his home in Long Beach, Cal., about December 10.

**James S. Morton, M.D.** University of Louisville, Ky., 1850; a Confederate veteran; died at his home in Hartford, Ky., December 8, from senile debility, aged 85.

**James Vincent Canavan, M.D.** Rush Medical College, 1894; a Fellow of the American Medical Association and first mayor of Appleton, Wis., died December 4, aged 53.

**Lee O. Rogers** (license, Iowa, years of practice, 1887); for thirty-five years a practitioner of Newton; died at his home, December 4, from heart disease, aged 69.

**Stanley L. Thorpe, M.D.** Cleveland University of Medicine and Surgery, 1882; formerly of Cleveland; died in Salt Lake City, December 7, from uremia, aged 62.

**Samuel E. Crose, M.D.** Central College of Physicians and Surgeons, Indianapolis, 1888; died at his home in Indianapolis, October 27, from pneumonia, aged 47.

**John Houston, M.D.** Manitoba Medical College, Winnipeg, 1906; of Cypress River, Man.; died at the home of his father in Starbuck, Man., recently, aged 35.

**Ham Hunter, M.D.** Ohio Medical University, Columbus, 1893; was found dead in his office in Columbus, November 30, from heart disease, aged 50.

**William Thurston, M.D.** American Medical College, Eclectic, St. Louis, 1880; died at his home in Orland, Cal., about November 26, aged 92.

**James R. L. Daly, M.D.** University and Bellevue Hospital Medical College, 1899; died at his home in New York City, November 29, aged 38.

**Samuel H. Backus, M.D.** Tulane University, New Orleans, 1897; of Pollack, La.; died suddenly at Gueyzan, La., about December 8, aged 40.

**Dugald Stewart** (license, Ontario, 1876); for more than thirty years a practitioner of Teeswater; died at his home, August 22, aged 64.

**William Bertram Arnold, M.D.** Eclectic Medical Institute, Cincinnati, 1879; died at his home in Rockford, Ill., November 23, aged 72.

**Dorsey L. Morris, M.D.** Medical College of Virginia, Richmond, 1897; died at his home in Greensboro, N. C., about November 5.

**John Lemuel Bethune, M.D.** Halifax (N. S.) Medical College, 1875; died at his home in Baddeck, N. S., September 27, aged 63.

**Edward C. Kalmerton, M.D.** Rush Medical College, 1887; died at his home in Milwaukee, October 26, from diabetes, aged 59.

**Archelaus M. Winn, M.D.** Atlanta (Ga.) Medical College, 1867; died at his home in Lawrenceville, Ga., October 25, aged 68.

**Charles A. Usilton, M.D.** Jefferson Medical College, 1882; died at his home in Philadelphia, December 3, from nephritis, aged 59.

**Nathan L. Hammer, M.D.** Physio-Medical College of Indiana, Indianapolis, 1882; died at his home in Indianapolis, October 27.

**Charles H. Sherman, M.D.** Louisville, (Ky.) Medical College, 1889; died at his home in Louisville, December 9, aged 69.

**William White Brewer** (license, Mississippi, 1882); died at his home in Lamar, September 23, from uremia, aged 85.

**Ernest Warren** (license, Oregon, 1891); of Newport, Ore.; was found dead in Portland, Ore., October 25, aged 50.

**Harvey J. Philpot** (license, British Columbia, 1894); died at his home in Vancouver, November 11, aged 80.

**Rev. John Gethin Thomas** (license, Ohio, 1897); died at his home in Lima, November 15, aged 71.

**Marion H. Jackson** (license, Arkansas, 1903); died at his home in Neely, November 7, aged 36.

**Arthur Fisher,** L.R.C.S. Edinburgh, 1880; died at his home in Montreal, December 3, aged 98.

# Correspondence

## Improved Technic for Blood-Counts

*To the Editor:*—I desire to make a few comments regarding the clinical report of Dr. Allan Eustis on an "Improved Technic for Blood-Counts: Rapid Method for Securing Exact Amount of Suspension" (The Journal, Nov. 29, 1913, p. 1984).

Although I have not seen the technic of placing the cover-glass on the counting-chamber, as recommended by Dr. Eustis, described in any book or journal before, yet it was the method in vogue at the William Pepper Laboratory of Hygiene at the University of Pennsylvania fourteen years ago.

Incidentally, I would mention the following modification of the *modus operandi* as advised in the article above referred to. The cover-glass is placed on the edge of the counting-chamber, with its edge approximately parallel with the edge of the counting-chamber. Then the tips of the forefingers are placed on the distal side of the cover-glass and the ends of the thumbs on the proximal edge of the cover-glass. While downward pressure is exerted with the forefingers, the thumbs are used to push the cover-glass across the counting-chamber. This technic is advocated, obviously, to cause all of the supposedly contact portion of the cover-glass to be closely in contact with the counting-chamber, while the two thumbs can readily push the cover-glass across the counting-chamber even though the cover-glass is in close contact.

The real object of this communication, however, is to correct one little (but important) point mentioned by Dr. Eustis, namely, regarding the size of the drop. I fear that beginners may find a pitfall in using a large drop of the blood and diluting fluid. Theoretically it would appear that the size of the drop would make no difference; but my experience has been that the smaller the drop (provided there is enough) the more easy it will be to obtain a satisfactory "mount" and the more likely it will be that we shall see Newton's rings after the first trial.

Charles Rea, M.D., York, Pa.

[The preceding letter was referred to Dr. Eustis, who replied that he did not know of the method being used in other schools and that he was positive that no one else in his section of the country had used it for the last eight years. We have also subsequently received the following letters:]

*To the Editor:*—In The Journal, Nov. 29, 1913, Dr. Allan Eustis of New Orleans gives an improved technic for blood-counts. I remember very clearly that when I was a resident physician at the Medico-Chirurgical College, Dr. J. Donald Zulick, our chief resident physician, showed me the very same technic, so that it is not original with Dr. Eustis. Nevertheless, it is a very good method and saves a lot of time.

C. H. J. Barnett, M.D., Philadelphia.

*To the Editor:*—In The Journal, Nov. 29, 1913, p. 1984, Dr. Allan Eustis of New Orleans gives an improved technic for blood-counts. This improvement was taught at Jefferson Medical College in 1904, and has been used constantly by most blood workers.

W. H. Kraemer, M.D., Wilmington, Del.

## Mizer Sanatorium

*To the Editor:*—Some time ago those in charge of the Mizer Sanatorium of this place stated to us that they wished to place the institution on a high plane and to conduct it in a strictly ethical manner. To such a degree would they conform to ethical rules that the most particular in matters of this kind would find no room to complain. With this distinct agreement on their part they were allowed to use our names as references.

Of late we have learned that even the ordinary rules of propriety have been violated by them and that these acts of unfairness to us had been going on for some time before we learned of their breach of faith with us. We at once notified them no longer to use our names in any of their advertising matter or on their stationery. It appears that before we had learned of the advantage that was being taken of our confidence, others had taken note of their unethical practices.

What we wish to do is to set ourselves right before the medical fraternity and to announce that we do not stand, and have not stood, for anything which we believe or know to be fraudulent or misleading.

EDMUND C. CARR, M.D., JESSE MCCLAIN, M.D., Coshocton, Ohio.

### Deaths from Eating Chestnuts

*To the Editor:*—In THE JOURNAL, Nov. 29, 1913, p. 2091, S. T. A. refers to the newspaper report of the death of a woman from poisoning by eating chestnuts, and asks for an explanation as to how chestnuts can be poisonous.

Aside from your answer that the matter was under investigation by the Bureau of Plant Industry, is it not possible that this patient was a subject of diabetes and that she died from coma from overindulgence in this article of diet? In the dietary for diabetes all forms of nuts are allowed *except* chestnuts, and I have strictly forbidden them to patients suffering from this disease, although diabetic patients have an inordinate craving for chestnuts at this season of the year. GEORGE J. LOCHBOEHLER, Washington, D. C.

### A Note on the Use of Ninhydrin as a Test for Peptone, etc.

*To the Editor:*—Ninhydrin works best in a strictly neutral medium. Slight acidity or alkalinity destroys its delicacy. Fluids should be made neutral before testing, litmus being used as an indicator.

S. L. CHERRY, M.D., Clarksburg, W. Va.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### REFERENCES TO RECENT ARTICLES ON ARTIFICIAL PNEUMOTHORAX

*To the Editor:*—Have you any later reports on tuberculous patients treated with intrapleural injections of nitrogen than the one by A. F. Lemke, THE JOURNAL, Oct. 14, 21 and 28, 1899, pp. 959, 1023 and 1077), and afterward printed in pamphlet form? I am much interested in this method and would be glad to have any information you may have on the subject.

C. W. JACKSON, M.D., Albuquerque, N. Mex.

ANSWER.—The following is a list of recent articles on this subject:

Robinson, Samuel, and Floyd, Cleveland: Artificial Pneumothorax as a Treatment of Pulmonary Tuberculosis, *Arch. Int. Med.*, April, 1912, p. 452; abstr., THE JOURNAL, May 4, 1912, p. 1398.
Montgomery, Charles M.: Pleural Effusion Due to Artificial Pneumothorax, THE JOURNAL, Feb. 15, 1913, p. 494.
Lillingston, C.: Pneumothorax Treatment of Phthisis, *Lancet*, London, Dec. 14, 1912; abstr., THE JOURNAL, Jan. 18, 1913, p. 244.
Hamman, L., and Sloan, M. F.: Induced Pneumothorax in Treatment of Pulmonary Disease, *Bull. Johns Hopkins Hosp.*, February, 1913; abstr., THE JOURNAL, March 1, 1913, p. 696.
Aron, E.: Therapeutic Artificial Pneumothorax, *Berl. klin. Wchnschr.*, Feb. 17, 1913; abstr., THE JOURNAL, March 22, 1913, p. 948.
Leuret, E.: Artificial Pneumothorax in Pulmonary Tuberculosis, *Arch. gén. de méd.*, March, 1913; abstr., THE JOURNAL, May 10, 1913, p. 1497.
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### PRESCRIBING FOR SYMPTOMS

*To the Editor:*—I wish to protest against the practice of prescribing for the mere symptoms of disease in answer to a correspondent as exemplified in "Treatment of Indicanuria" (Queries and Minor Notes, THE JOURNAL, Nov. 29, 1913, p. 2000). One can hardly believe it necessary to call attention soberly and critically to the simple fact that the underlying condition causing the symptom indicanuria is to be discovered, that it is this condition which is to be treated, and that it may be anything from simple stasis due to lack of opportunity to carcinoma and diverticulitis. Why [illegible] eructations," for "biliousness," for

W. A. GROAT, M.D., Syracuse, N. Y.

ANSWER.—The protest plainly comes from a not too careful reading of the question. The answer refers to the one case about which the question is asked. Indicanuria, in any case, depends on putrefactive changes and its presence for five years with, apparently, no other symptoms certainly shows that no serious condition is present, and that, in this case, putrefactive changes in the intestine constitute the "causative factor." It is gratifying that we have readers so critical as to object both to prescribing for symptoms and to the warning to look for the cause; but a practitioner is to be congratulated if the diseases he sees are so clearly marked that he is always able to discover a cause and never finds himself compelled, as in "biliousness," "indicanuria" or "menorrhagia," to follow a routine treatment of symptoms until an obscure cause can be discovered. It occasionally happens, also, that the warning that causative factors should be looked for is needed by a routine practitioner.

### PROPHYLAXIS AGAINST CARRYING INFECTIONS BY PHYSICIAN

*To the Editor:*—Can you tell me if the following procedure in visiting patients with contagious diseases is safe?

I wear a cap, gown and gloves which I carry in a separate grip. After taking them off I pour a dram or two of formaldehyd 40 per cent. solution on them and close the grip. I usually do not use them again for at least twenty-four hours. Does such a process kill the germs so that I shall not expose another patient to the disease or contaminate myself in putting on the outfit again? I know a number of men who use this method.

C. E. C., Kansas.

ANSWER.—The opinion is growing that the infectious diseases, except those known to be transmitted by insects, are spread directly from one living being to another, and that fomites play little or no rôle in their transmission. At present, however, the precaution of wearing such an outfit as that described is a proper one and indicates that care is used not to spread infection. The use of the formaldehyd solution in sufficient quantity to produce by its evaporation in the grip a strong gas would undoubtedly have a disinfecting effect; not so much, however, in the dry state as in connection with steam or vapor. Disinfection with formaldehyd or sulphur is more efficient if the articles to be disinfected are wet, as more of the formaldehyd or sulphur dioxid gas is absorbed.

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*To the Editor:*—Some time ago I saw an article in the Waterville *Sentinel* entitled, "War on the Rat." I wrote them in regard to it and they answered that they thought that if I wrote you I could get the information that I wanted.

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J. G. Baker, M.D., Mattoon, Ill.

Answer.—Malachite green has been used as a confectioner's color, and is stated by a number of authors to be non-poisonous. On the other hand, Penzoldt says:

> One hundred mm. per kilogram body-weight of rabbit, or 70 grains per 100 pounds, injected subcutaneously, caused after the third day motor paralysis and occasional cramps, which resulted fatally at the end of the ninth day.

According to Lewin:

> In the case of one workman, in contrast with others who had long been unaffected by this substance, itching, burning, inflammation and swelling of hands and feet, and formation of blisters occurred.

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*To the Editor:*—Please inform me if Pa-Pay-Ans (Bell) contains drug ingredients other than those stated on their printed label.

D. M. Hoyt, M.D., Philadelphia..

Answer.—An analysis of Pa-Pay-Ans (Bell) was included in the report of the Council on Pharmacy and Chemistry rejecting the product (The Journal, Aug. 14, 1909, p. 569). While the analysis did not prove the presence of any ingredient not declared by the manufacturer, it failed to find one of the constituents claimed to be present—the constituent after which the medicine appears to have been named, namely, papain.

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*To the Editor:*—Can you inform me what regions of the West and Southwest are free from hay-fever?

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A general meeting of the medical profession held in Berlin, October 26, decided that after Jan. 1, 1914, the insured population of Germany, with the exception of Dresden, Hamburg and Berlin, should not receive any treatment from physicians through the insurance societies, unless these societies acceded to the demands of the physicians, or unless the government saw fit to intervene. The meeting was called by the president of the National Federation of Medical Societies, and was attended by 458 representatives of 384 medical societies, with a total membership of 21,207 physicians. The situation in Germany is a plain issue between the physicians on the one hand and the insurance societies on the other. The resolution adopted by the meeting stated clearly that there was no intention on the part of the physicians represented to refuse medical services to the members of the insurance societies as individual patients; the refusal was to treat them as members of the societies. Unless the demands of the physicians are accepted, they propose, after the first of the year, to treat each individual as a private patient and not as a member of an organization. In a word, the proposal is to go back to the original system of individual professional relations between physician and patient, without any middleman or intermediate party. The points under dispute are numerous and intricate, and are embodied in forty-four clauses which have been discussed in detail by the profession of Germany for some time past. These differences of opinion have to do with the right of physicians to representation on the administering boards of the insurance societies, and the right of patients to choose the physicians whom they prefer, the method of organization and administration of the medical boards, the handling of complaints, the appointment of medical officers and the determination of their duties, the remuneration for physicians and the periods and character of the contracts between physicians and insurance societies. This declaration of principles represents the minimum demands of the physicians. The compensation asked for is a per capita fee of 5 marks. This is not to include night visits, attendance on confinements or abortions, treatment of persons who have only a legal but no medical claim on sick benefits, or the treatment of families of insured persons. For all of these services, special arrangements are to be made.

Following the representative meeting of the general profession of Germany, the Federation of Insurance Societies not only refused to accede to the demands of the physicians, but refused to recognize the right of physicians to organize the profession for the protection of their individual rights. This situation, which reminds the American reader of the conflicts between corporations and employees, and the fight between these conflicting parties over the right of the working men to organize and the recognition of the unions, led the Berlin Medical Society to take an action which is rarely necessary, namely, to call a special meeting to discuss medical politics. On November 12, the Berlin Medical Society met in extraordinary session with Professor Orth in the chair. The leading members of the profession of Berlin strongly endorsed the stand taken by the representative meeting and pledged their support to the movement for professional independence. Professor Kraus said that the insurance societies had no right to dictate terms to physicians, or to insist on choosing physicians for patients. He advised the medical profession to remain "united and firm, so that you may be able to preserve for your profession its independent freedom." Dr. Munter declared that the scientific and economic decline of the medical profession must follow the imposition of oppressive terms of contract practice. He said that the insurance societies had formed themselves into a protective organization and that they were endeavoring to prevent any similar organization among physicians. A motion was unanimously adopted declaring that the demands of the insurance societies seriously imperiled the freedom and independence of the medical profession, and that the Berlin Medical Society pledged its wholehearted support to the medical profession in Germany.

### SITUATION IN ENGLAND

In England the situation is quite as serious, even if somewhat less tumultuous. Nearly a year's operation of Lloyd-George's insurance act has disclosed many weaknesses and difficulties in administration. The regulations governing the act are being revised and a general discussion is going on regarding the exact terms of the revision. As an illustration of the practical workings of the act, a special commissioner of the London *Lancet*, in a recent issue, writes interestingly of the situation in Derby and Derbyshire. Of the 560,129 inhabitants in Derbyshire, outside of Derby, 178,294 came under the provisions of the insurance act. Practically all of the local physicians, to the number of about 300, are on the "panel," that is, they have enrolled as desiring to treat persons under the provisions of the law. This gives an average of about 600 patients to each physician. One practitioner had about 3,000 insured persons on his list, and was responsible for the medical care of over 700 families. Difficulties regarding the payment of mileage has arisen, as well as practical problems regarding the dispensing of drugs, the filling of prescriptions, etc. One interesting result, according to the writer in the *Lancet*, is that the act is doing away with the "prescribing chemists," that is, with the practice of drug-clerks prescribing for customers. This fact is apparently welcomed by the high-grade druggists as well as by physicians. The *Lancet* says, "The custom of going to the chemist for advice, as well as for a bottle of medicine, is dying out rapidly, as the public argues, why consult a chemist when it does not cost any more to have a doctor?"

Another difficulty is malingering on the part of patients. The working man has to pay a fixed amount for medical and sick benefit. It does not cost him any more to be sick than it does to be well. With the large number of patients which the insurance doctors have to see and examine, it is impossible to make a careful examination in all cases. The friendly societies are endeavoring to prevent malingering by sending inspectors of their own to inspect cases in which they suspect deception. This has led to considerable controversy.

The bulk of the discussion at present, however, turns on the new regulations. These are most exhaustive, covering twenty-three pages of fine print of a supplement in the *British Medical Journal*, and containing detailed provisions for almost every part of the law. An explanatory memorandum summarizing the regulations, states that the new provisions do not affect the amount available for remuneration, but have to do principally with the method of calculating the number of persons for whom the physician is entitled to compensation. All sorts of difficulties have arisen regarding persons removing from one district to another, and the amount of compensation which the physicians in the different districts should receive on their account. It has been found impossible to keep an accurate register showing the total number of insured persons in any district at any one time, owing to the difficulty involved in the notification of removals and the mechanical work of correcting the registers. It has been found necessary, therefore, to adopt some plan by which the number of persons for whom the physician is entitled to compensation shall be averaged rather than directly enumerated. Considerable difficulty has also been encountered in dealing with complaints, and it has been found necessary to enlarge the powers of the committee dealing with this subject.

The general situation in England seems to be that the medical profession has gradually and under protest submitted to the new law and that it is now making an effort to secure as favorable regulations for its administration as possible. The *British Medical Journal*, in a recent issue, asserts that the insurance scheme is being made a counter in the game of party politics, and that the two dominant parties in the British House of Commons are using it as a political issue without regard to its merits. Leaders on both sides, the *Journal* says, are trying to conciliate the managers of the friendly societies. Mr. Bonar Law, in criticizing the act, said that many of the friendly societies were drifting rapidly into insolvency, that the act was having the worst possible effect on the character of the people, that the details of the act were not to be cured by amendments or regulations, and that, if his party were given an opportunity, it would appoint a committee to investigate the entire subject and to report whether it would not be possible, in the interest of the nation, to turn the entire scheme into a voluntary instead of a compulsory system.

Mr. Winston Churchill, in replying to Mr. Law, challenged his statements and asserted that it was one of the best administrative achievements of the century, although in force only two years and working for only nine months. According to Mr. Churchill there were 13,700,000 persons actually insured through 233 insurance committees, and 23,500 societies and branches. Twenty-two million visits had been made by 20,000 physicians at a cost estimated at £4,500,000 (about effect; not so much, however, in the dry state as in connection with steam or vapor. Disinfection with formaldehyd or sulphur is more efficient if the articles to be disinfected are wet, as more of the formaldehyd or sulphur dioxid gas is absorbed.

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On these data Robin founds a comprehensive plan of treatment of consumption and tuberculosis. Here it may be remarked that he uses these terms in a somewhat different sense from the usual one. Tuberculosis is, as it were, something added to the consumptive state. He transposes Niemeyer's celebrated dictum and says that "the greatest danger which threatens a consumptive is to become tuberculous." The indications for treating the disease are given under five headings: preventive medication, remineralization, direct antiseptic medication, local medication and antitoxic medication.

Robin uses tuberculin in doses just sufficient to provoke a focal but not a general reaction, hoping thereby to produce a stimulant or counterirritant effect on the focus or infection and the healthy surrounding tissues.

Space is lacking to criticize the fundamental assertions on which the theory of Robin is based. One may be permitted to ask, however, how the determination of the proportions of minerals in a tissue can prove a demineralization. May not this relative decrease in the amount of inorganic constituents reckoned on the weight of the fresh tissue be due in fact to an increase of contained water? Whether or not a similar criticism applies to his urinary determinations we are not able to ascertain from the figures in the book. Assuming the phenomena to be correctly determined, the question arises, May not this accelerated metabolism be due to a tuberculosis already existing? It is now pretty generally accepted that most persons acquire tuberculosis in infancy or early childhood; may not the symptoms observed in predisposed persons be really the slight but persistent action of an unhealed tuberculosis?

The Practitioner's Visiting-List, 1914. Leather. Price, $1.25. Philadelphia: Lea & Febiger.

The Physician's Visiting List for 1914. Sixty-Third Year of Its Publication. Leather. Price, $1 net. Philadelphia: P. Blakiston's Son & Co.

Medical Record Visiting List for 1914. Leather. Price, $1.25. New York: William Wood and Company.

The Physician's Visiting Lists offered by various publishers this year are, as usual, very attractive and useful. All of them contain special memorandum pages for each month ruled for each date, and amount and ledger page. In addition there are special pages for miscellaneous memoranda, obstetrical cases and practice, vaccinations, patients' and nurses' addresses and cash accounts. There are various calendars, tables, dosage lists, etc. All are well known, practical and attractive, and probably every physician has his particular choice.

The Doctor in Court. By Edwin Valentine Mitchell, LL.B. of the Massachusetts Bar. Cloth. Price, $1. Pp. 152. New York: Rebman Company, 1913.

This book contains a practical and interesting discussion of physicians' relations to the courts, and of the general principles of the laws affecting them. The first chapter is the most interesting and valuable to the physician who but seldom goes on the witness-stand. It contains advice that is well worth heeding, and the witness, if he follows it, would make a better spectacle than does the average doctor when giving evidence. The remaining chapters discuss the laws, including those on the regulation of the practice of medicine, which affect physicians and with which every physician should be familiar. While not large or exhaustive, this work is sufficiently complete for all ordinary purposes. The language is clear and non-technical. We commend the book to those who may be called into court, which means to all in the practice of medicine or surgery.

# Miscellany

## The Fundamental Basis of Nutrition

*From an Address by Dr. Graham Lusk before the New York Academy of Medicine*

It seems as though mankind has a right to a knowledge of the value of foods which a bountiful Nature has provided for human use. Even among educated persons there are the grossest errors of judgment regarding the nutritive value of a hen's egg, and few of those who eat at restaurants realize that the greater quota of the nourishment brought to them is not in the specific dish served but in the bread and butter which ostensibly is presented as a gift. The function of nutrition is to furnish fuel to the organism that the motions of life may continue, and furthermore, the workshops of life are in a constant state of partial breaking down and materials must be furnished to repair the worn-out parts. In the fuel factor and the repair factor lies the science of nutrition.

The heat given off by the body is found to be equal to the quantity of heat which would have arisen from the oxidation of just that quantity of protein, fat and carbohydrate estimated to have been destroyed. Drs. Du Bois and Warren Coleman discovered that a typhoid fever patient, during a period of five hours of rest in their calorimeter, produced the same number of calories as it was calculated that he should produce from the materials that were oxidized in his body. The contemplation of such a result drives home the fact that if the typhoid fever patient is to be kept from losing his own body-muscle and fat, he must be given the equivalent of 422 calories in food substance during a five-hour period. Measurement of the total heat production becomes a measure of the intensity of the life processes. All well-nourished mammals produce the same number of calories per square meter of surface. A normal man resting in bed in the morning, having been without food for fifteen hours, will manifest a minimum level of heat production. The basal heat production of an average man weighing 70 kg. will be 70 calories per hour, or 1,680 calories in twenty-four hours. If food were taken extra heat would be produced, but not exceeding 10 per cent. of the basal heat production, or 7 calories per hour, or 168 per day, so that the maintenance requirement of this man resting in bed was 1,848 calories daily. Beyond this the amount of fuel needed depended on the amount of work done. The normal man requires exercise and this calls for an additional amount of fuel. A man leading a sedentary life and taking perhaps two hours of exercise daily needs in round numbers 2,500 calories daily in order to provide proper nourishment and repair. Men doing heavy physical labor require at least 3,000 calories. A boy of 12 years requires 1,500 calories daily, and a baby when first born requires 100 calories. In fever hyperthyroidism and conditions in which the heat production of the body is far above the normal, increased nourishment is indicated. While the body may suffer from the deficiency of certain elements as calcium or iron, the really important material to be treasured and protected is the body protein. Proteins are especially valuable if they contain an array of units which when reunited in the body form body proteins. Proteins in which one or more of the necessary units are lacking can never be reconstructed into body proteins. Such inferior proteins occur among the plants. Plant proteins are reconstructed into beef proteins and thus beef proteins attain a higher biologic value than plant proteins. There can be no doubt, in view of the results of experiment, that meat, fish, milk and egg proteins possess superior value to the vegetable proteins. The proteins of rice and potato are of more value than those of bread, beans and Indian corn. Such facts make it possible to classify proteins into groups according to their physiologic value, and as milk is now sold in three grades, in like manner the protein of foodstuffs could be labeled A, B and C according to their physiologic value, and to Group D might belong gelatin and some other proteins that cannot replace body protein that is continually wearing away.

Protein is usually taken in excess of that bare requirement which is measured by the quantity necessary to repair the tissues. This excess is oxidized and used as fuel just as are fats and carbohydrates. Protein has one property out of all proportion to that possessed by the other foodstuffs in that it largely increases the heat production in the body. Persons maintained on a low-protein diet may suffer intensely from the cold. Glycocoll is one of the units that cause a marked increase in the heat production. In diabetes ingested glycocoll is completely converted into sugar without undergoing oxidation, and hence it acts as a chemical stimulus and not in virtue of its energy content. This heat-producing action is effected by all kinds of protein, by those of meat, fish, milk, egg, and such incomplete proteins as gelatin. In order to obtain the warming effect it is not necessary to purchase so costly an article as beef. Rubner believes that there should always be an excess of protein-constructive material in the diet so that if after physical exhaustion there is a depletion of the glycogen reserve there may be building units in reserve to quickly repair the tissue destroyed. It is not desirable for the laboring man to take the minimum amount of protein.

It has been known for a long time that life cannot be maintained on an absolutely pure mixture of salts, fats, carbohydrate and protein. The human organism is extremely sensitive to certain substances in minute quantities, as, for instance, epinephrin, the active constituent of the suprarenal glands, which is present in the blood in one part to 100,000,000 and is essential to human life. The relation of polished rice to beriberi has been recognized, and Funk has sought to isolate those substances, termed by Funk vitamins, which prevent beriberi and are necessary to the normal growth and nutrition of the animal tissue. If meat is eaten their direct ingestion from the plant becomes unnecessary. These vitamins enter into the composition of normal maternal milk; if a mother has beriberi these substances will be lacking in her milk and consequently the infant will also have the disease. Beriberi and scurvy do not exist in the United States, they only occur when a one-sided diet deficient in vitamins is depended on.

We may now consider the high cost of living in the light of scientific knowledge of food value. The efficiency of labor depends on its energy and constant repair, and it is certainly of no small account that the citizen should know how best to maintain the human machine at its maximum efficiency. The manufacturer of foodstuffs will not give this information; but if, through the medium of the schools and the press, every one knows that a man of sedentary habits requires 2,500 calories and a laboring man 3,000 calories and more, no one suffering from want will spend his money for a can of tomatoes which is little else than flavored water. It has been estimated that in a family of five comprising the father, a clerk, the mother, who does her own housework, two children, aged 9 and 6 years, and an infant 1 month of age, 7,750 calories are required daily. A study of the market values of staple foods in New York City, Jan. 28, 1913, showed that for an adult requiring 2,500 calories, or one-third as much as the entire family, the cost would not exceed 20 cents a day at the market price of fresh materials. When more than an average of 8 cents is expended for 1,000 calories of nutriment, the diet must include luxuries. The following market prices of various food staples shows the great variation in the price of 1,000 calories: glucose, 1⅔ cents; cornmeal, 2 cents; wheat flour, 2.5 cents; oatmeal, 2.8; canesugar, 3⅓; dried beans, 4; salt pork (fat), 4.5; rice, 5; wheat bread, 5⅓; oleomargarin, 7.5; potatoes, 7.5; butter, 10; milk, 10; smoked ham, 10.75; cheese, 11⅔; loin pork, 12.25; mutton (leg), 16.25; salt cod, 19.5; sirloin beef, 4; turkey, 40; fresh cod steak, 42. The relative amount of protein for the family of five is furnished by bread with the addition of 4/5 pounds of salt cod, or 3/5 pounds of smoked ham, or 4/5 pounds of cheese, or 2½ pounds of milk, or 1½ pounds of loin pork, or 1⅓ pounds of leg of mutton, or 1¼ pounds of cod steak, or 1⅓ pounds of sirloin steak, or 1⅓ pounds of turkey. It is evident that if each package of food were sold as containing so many calories, the widely heralded food value of such articles as Postum, for example, would "fold their tents like the Arabs, and as silently steal away." On the basis of these values it would cost a poor family from 50 to 70 cents a day for food; a family of moderate means where two servants are kept, from $1 to $1.40; and a wealthy family where six servants are kept, from $1.50 to $2.10. Whatever is spent above this is for waste or in the form of flavors of high price. Recently Miss Dorothy Lindsay made a report concerning the working classes in Glasgow in which she concludes that one of the main contributing factors of malnutrition among the poor is bad marketing. The experience of America in the matter of school lunches for the children of the poor shows that it is demonstrable economy on the part of the state to feed the undernourished child. But the state should also teach the mother the value of bread and milk, and that weak tea cannot take the place of milk in the nourishment of the child. In a study into the physiologic value of various food sold over the counter of Child's restaurants in this and other cities, F. C. Gephardt of the Russell Sage Institute of Pathology collected and analyzed 400 samples. For comparative standards bread and vintage champagne have been selected, neither of which was purchased in the restaurant.

FOOD VALUE OF PORTIONS, INCLUDING BREAD AND BUTTER WHEN SERVED IN CHILD'S RESTAURANTS

| | Cost, Cents | Calories, Total | Protein, Per Cent. | Calories for Five Cents | Cost in Cents per 1,000 Calories |
|---|---|---|---|---|---|
| Bread | 5 | 933 | 12 | 933 | 5 |
| Apple pie | 5 | 337 | 5 | 337 | 15 |
| Boston pork and beans | 15 | 828 | 12 | 276 | 18 |
| Ham sandwiches | 5 | 170 | 20 | 170 | 30 |
| Corned beef hash | 15 | 507 | 14 | 170 | 30 |
| Beef stew | 15 | 461 | 25 | 154 | 32 |
| Club sandwich | 25 | 409 | 20 | 52 | 61 |
| Sliced pineapple | 5 | 36 | 46 | 36 | 138 |
| Tomatoes, lettuce mayonnaise | 20 | 53 | 16 | 13 | 385 |
| Pint of champagne | 200 | 345 | 0 | 9 | 588 |

The extreme variability of the purchasing power of money for food stands here exposed in the lime-light. The government should take up this matter and give information regarding all foodstuffs sold in packages. The manufacturer could send his sample can to Washington to the Bureau of Chemistry, declaring that to be his standard and requesting information regarding his label. He should pay for this analysis as the patentee pays for his patent. If the government at any time finds the manufacturer of foods and "patent medicines" selling a material on the market of a different character from the standard deposited with the government, the manufacturer should be heavily fined. Manufacturers have complained that in other countries scientific men sit on the boards of directors of the manufacturers of foods and "patent medicines." In this country that sort of thing has been discountenanced and rightly so. The day of the sale of a man's scientific reputation and that of an institution with which he is connected has passed. The scientist has come to have sufficient altruism to believe that his services belong to all the people and not to a set of money-making individuals. Appeal is made to the understanding of physicians and of educated people of this country to take interest in this subject to the end that enlightened activity for the welfare of mankind may follow.

**Shipping Live Fish in the Frozen State.**—In the markets of Irkutsk, Siberia, fish are displayed for sale in the frozen state piled up like cordwood (see Nature's Cold-Storage Plant, quoted from *Am. Food Jour.*, The Journal, Oct. 19, 1912, p. 1429). Fish in cold storage are preserved frozen in slabs of ice. The latter method is now applied in the shipment of live fish. The method of shipping live fish in water is not feasible on account of the expense, as from 1 to 4 gallons of water are required for each pound of fish, according to the variety. Since the discovery by Pictet that fish may be frozen in blocks of ice without being killed, and that they will become as lively as ever after they are thawed out, a method has been devised for preparing them for shipment in ice. The method is described in the *Scientific American*. The fish in a large amount of water are placed in a closed tank, and oxygen under pressure is supplied. The greater portion of the water is then drawn off. The fish remain in good condition on account of the abundant supply of oxygen. The vessel containing the fish is then placed in a freezing tank and the fish are frozen into the ice formed. The blocks of ice containing the fish can then be piled up in the ordinary refrigerator car. On arrival at their destination the fish are put through a slow thawing process lasting ten hours, when they return to their normal state of active animation.

**Health as a Community Asset.**—To the extent that the inhabitants of a community are sick the community itself is diseased. The community has health only in so far as the people are free from disease. To a community health is a valuable asset. It insures prosperity. It attracts people. It increases the value of the land. Many letters are received daily at the Public Health Bureau at Washington from people who are contemplating buying land or moving from one state to another, asking about the health conditions of certain localities. They want to know whether there is much sickness in this or that locality, whether there is any malaria, much typhoid fever or tuberculosis, and whether there is a pure water-supply. People are thinking in these days of their physical welfare and have no desire to live in localities where insufficient attention is given to the prevention of disease and where there is more sickness than there should be. The community that has health has a distinct advantage in the competition for economic prosperity over the sick community.—John W. Trask, *Public Health Rep.*

## Medicolegal

### Charitable Associations Not Exempt from Liability for Failure to Guard Machinery

*(McInerny vs. St. Luke's Hospital Association of Duluth (Minn.), 141 N. W. R. 837)*

The Supreme Court of Minnesota, in affirming a judgment for the plaintiff, who was injured on a mangle while in the defendant's employ, holds that Section 1813 of the revised laws of that state of 1905, imposing on all persons and corporations owning or operating dangerous machinery the duty to cover or guard the dangerous parts thereof, so far as practicable, applies to charitable associations owning and operating such machinery, as well as to all other persons or corporations similarly situated. The duty thus imposed is absolute and not to be delegated, and a failure to discharge it renders the charitable association liable to its servants and employees who are injured in consequence of the neglect.

In reaching this conclusion, the court says that it is not to be understood as underestimating, or failing to appreciate to its fullest extent, the blessings bestowed on the destitute, and the poverty-burdened applicant for help. Its view is that the duty created by law for the protection of servants is absolute, and no employer should be exempt therefrom, except by action of the legislature. No public good can come from permitting one charitable corporation, by the failure of a duty imposed by law, to maim and disfigure its servants and employees, when, depending on the nature of the injury, their future welfare must of necessity be looked after by some other charitable association, public or private, or by already overburdened or poverty-stricken relatives and friends. No such situation should be brought about by an arbitrary rule of immunity from liability, applicable only to one class of persons, unless deemed by the legislature necessary to the existence and life of charitable associations.

Nor is the court to be understood as holding that the trust funds of the defendant may be applied to the payment of the verdict. That question was not involved. The defendant was not supported exclusively from such funds; on the contrary, its maintenance would seem from the evidence to come principally from patients who pay for services rendered them.

### Physician's Right to Claim Safe Exempt

*(Sterman vs. Hann (Ia.), 141 N. W. R. 934)*

The Supreme Court of Iowa reverses a judgment against the plaintiff, a physician, who, it says, sought by an action in replevin to recover a half interest in a safe levied on by the defendant, as constable, under an execution, and claimed by the plaintiff to be exempt under the Iowa law, on the grounds that he was a physician and surgeon and used it in and about his business. He owned the safe in common with his wife, each owning an undivided half interest. It was, however, in his possession, and under his control, with the knowledge or consent of his wife, and he used it in and about his business for the purpose of keeping therein his professional instruments, books and accounts, and certain rare and valuable medicines. The defendant constable made no claim, under the execution, against the interest of the wife. Therefore, as against the constable, the plaintiff had the right to the possession of his wife's interest in the property, and if his interest in the property was exempt, as the court holds it was, he had the right to hold that, too, as against the levy of attachment. He, therefore, had dominion over the entire property. He had a right to take, use it, and keep it, and this right came to him from the other party having a joint interest with him in the property. He had dominion over the property, with the consent of his wife, and had a right to use it in connection with his business, and for the purposes for which it could, and would, be used were he the sole owner. The safe was exempt, in the hands of the plaintiffs, the same as office furniture and the supplies of a lawyer are exempt. In other words, a physician can hold, as exempt, a safe kept and used by him in his office in connection with his business as physician and surgeon, for the purpose of keeping therein his professional instruments, books and accounts, and medicines. It must be borne in mind that exemption laws are to be liberally construed; that they are given to the debtor to secure to him the necessary comforts of life for himself and family, and are enacted on the ground of public policy, for the purpose of saving debtors and their families from want, by reason of misfortune or improvidence, and should be so construed as to carry out the intent and purpose of the legislature.

### Validity of Ordinance Prohibiting the Maintenance of "Museums of Anatomy"

*(City of Chicago vs. Shaynin (Ill.), 101 N. E. R. 224)*

The Supreme Court of Illinois holds constitutional an ordinance of the city of Chicago which provides: "It shall be unlawful for any person, firm or corporation to own, conduct or operate any exhibition commonly known as a museum of anatomy, or other exhibition, show or place of amusement which is open to the general public, whether admission thereto is restricted by sex and age or not, or whether a fee for admission thereto is charged or not, wherein the principal part of the exhibition is illustrative of the human anatomy, or wherein are exhibited any books, pamphlets, circulars, pictures, charts, diagrams, models, casts or other articles, paintings, drawings or designs of any kind illustrating or describing the genital organs, or containing any other obscene, lewd, indecent or immoral exhibition of any kind, when such museum or other exhibition is conducted for gain or profit, either directly or indirectly, or for the purpose of advertising or in connection with a place where medical treatment is offered or medicine is sold, or for any immoral purpose whatever."

The court says that if it be argued that the cure of the sexual diseases portrayed by these models is not an unworthy object, it may be answered that the exhibition of offensive and repulsive models on sexual subjects, which may pander to the morbid tastes and arouse the sexual desires of those who are attracted to the place, does not have any necessary relamust be attributed to something which distinguishes butter from the ordinary fats, for not only do lard and olive oil lack this growth-promoting power, but young rats grow on "protein-free milk" foods when all of the lard is replaced by carbohydrate and no ether-soluble substances are present in the food.

It thus appears improbable that glycerids of the fatty acids ordinarily present in foods are responsible for the promotion of the growth observed when butter-fat replaces lard in the diet of rats which have ceased to grow. Lecithin and other phosphorus or nitrogen-containing substances are excluded by the absence of phosphorus and nitrogen from butter-fat; and cholesterol by the fact that even more of this substance has been obtained from lard than from butter. So far as Osborne and Mendel's experience has shown, the addition of butter-fat to our natural "protein-free milk" foods gives them an efficiency quite comparable with that of milk-food in promoting recovery and the completion of growth.

The exact chemical differences between the adequate butter-fat and the inadequate lard (which determine success and failure, respectively, in the food-mixtures employed) are far from being satisfactorily known. Chemical examination of the butter-fat indicates that the effective component is not a phosphatid or any inorganic substance, inasmuch as nitrogen, phosphorus and ash are lacking in the product employed. It is suggestive to note that in the case of the lard we are dealing essentially with a fat-mixture deposited in storage depots of the animal organism; in the other, the butter-fat represents the product of metabolic activity and synthesis on the part of the cells of the mammary gland. What, if anything, this distinction between cellular product and reserve fat may mean physiologically, remains to be investigated. Butter-fat has shown a further interesting nutritive superiority over lard. At certain periods of the year, particularly in summer months, the authors have frequently failed to secure satisfactory growth on the dietaries which proved adequate during the usual period of sixty to one hundred days at other seasons. Occasionally young rats in the stock colony have exhibited a similar "epidemic" of poor growth at the same season. The failures are, however, not common to rats fed on the milk-food; and Osborne and Mendel have lately observed that the seasonal failure is also averted by the addition of butter-fat to the usual "protein-free milk" food-mixtures. Again, another type of nutritive deficiency exemplified in a form of infectious eye disease prevalent in animals inappropriately fed is speedily alleviated by the introduction of butter-fat into the experimental rations. On the other hand, no amount of butter-fat will induce growth on certain dietaries in which the proportions and nature of the inorganic salts are inappropriate or the quantity and character of the protein is inadequate. Egg yolk-fat appears to behave like butter-fat; some other oils have thus far proved no more efficient than lard. Such considerations make it evident that the comparative value of the natural fats employed in nutrition must be determined, as well as the individual rôle of the different proteins, carbohydrates and mineral nutrients.

### Journal of Experimental Medicine, New York

*December, XVIII, No. 6, pp. 601-755*

17 *Intraperitoneal Lysis of Tubercle Bacilli. W. H. Manwaring and J. Bronfenbrenner, New York.
18 *Further Experimental Studies in Tetany. W. G. MacCallum and K. M. Vogel, New York.
19 *Characters of Third Transplantable Chicken Tumor Due to Filterable Cause. P. Rous and L. B. Lange, New York.
20 Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. E. B. Krumbhaar, J. H. Musser and R. M. Pearce, Philadelphia.
21 *Production of Experimental Nephritis by Repeated Proteid Intoxication. W. T. Longcope, New York.
22 Relation of Auricular Activity following Faradization of Dog's Auricle to Abnormal Auricular Activity in Man. G. C. Robinson, New York.
23 Effect of Morphin on Mechanism of Dog's Heart after Removal of One Vagus Nerve. A. E. Cohn, New York.
24 Predominant Influence of Left Vagus Nerve on Conduction between Auricles and Ventricles in Dog. A. E. Cohn and T. Lewis, New York.

17. **Intraperitoneal Lysis of Tubercle Bacilli.**—Manwaring and Bronfenbrenner found that tubercle bacilli injected into the peritoneal cavities of tuberculous guinea-pigs, rats, rabbits, dogs and monkeys rapidly disappear from the peritoneal fluids, while persisting in the peritoneal fluids of normal control animals. This disappearance they regard as being in part due to an adhesion of the injected bacilli to the peritoneal leukocytes and a fixation of the leukocytes on the omentum. The injected tubercle bacilli can be recovered quantitatively from the peritoneal cavities of normal guinea-pigs from one and one-half to two hours after the injection, while from tuberculous guinea-pigs only 65 per cent. of the bacilli can be recovered at this time. Isolated peritoneal tissues from tuberculous guinea-pigs have the power of destroying tubercle bacilli *in vitro.* A second factor reducing the number of tubercle bacilli free in the peritoneal fluid is therefore an actual lysis of the bacilli. The intraperitoneal lysis is not due solely to substances present in the circulating fluids, since the phenomenon cannot be produced by these fluids *in vitro,* and since a lytic power cannot be passively conferred even by a direct transfusion of blood from tuberculous to normal animals. The intraperitoneal lysis is apparently due to specific changes in the fixed peritoneal cells of the tuberculous animals.

18. **Tetany.**—It has been the author's aim to determine in what particular the blood is altered during tetany so that it can produce hyperexcitability of the motor nerves. As a working hypothesis it has been assumed that (1) there may be a lack of calcium in the blood and tissues; (2) there may be a circulating poison which like an oxalate could render inactive the circulating calcium, and (3) there may be a substance in circulation vaguely resembling strychnin in its action on the nervous system and directly causing the hyperexcitability. The authors do not attempt to decide which, if any, of these explanations is the true one, but certain experimental results are brought forward. If tetany blood be used to perfuse a normal leg the excitability of the nerves rises to a characteristically high level and the addition of parathyroid extract to the blood has little or no effect in lowering this excitability. Parathyroid extract whether from the ox or the dog fails when injected into the circulation of an animal in tetany to reduce the excitability of the nerves markedly or permanently, although it seems to affect the more sensitive ganglion cells, thus cutting off excessive impulses to the periphery. Although the nerves remain hyperexcitable, tetany is usually much diminished or abolished entirely.

This seems to be analogous to the action of ether or any other anesthetic which may inhibit the activities of the ganglion cells, although it leaves the nerves excitable and able to conduct impulses. An animal in tetany relaxes instantly on being given ether although the excitability of the nerves to electric currents is little changed. Bleeding followed by the replacement of the blood with an indifferent solution free from calcium stops tetany and lowers the excitability of the nerves. Probably this cannot be ascribed to the removal of a circulating poison, but rather to a general disturbance of the nutrition of the nervous system. Oxalate-like substances introduced into the circulation rapidly, and for a short time only, may kill the animal, but they seem to produce no change in the excitability of the nerves. If the solution is injected very slowly and over a long period the protective action of the body seems to be overcome and the excitability of the nerves rises to high levels. This seems to resemble somewhat the latent period after the destruction of the parathyroid before tetany begins. Direct analysis of the blood shows that as compared with the normal, the blood of an animal in tetany is very poor in calcium. Administration of parathyroid extract does not increase this calcium content. On the contrary, if the extirpation of the parathyroids has been incomplete so that tetany does not appear, the calcium content of the blood is that of the normal animal. Even yet, therefore, in spite of efforts to shake it, the theory that tetany is closely dependent on a disturbance of the calcium content of the blood is supported by stronger evidence than any other idea, but much remains to be done before a clear conception of the process is reached.

19. **Chicken Tumor Due to Filterable Cause.**—A spontaneous chicken sarcoma, peculiarly fissured by blood sinuses and with

a tendency to intracanalicular extension into them, has been transplanted by Rous and Lange and studied in eight successive groups of fowls. Histologically the growth is a characteristic neoplasm, while in its transfer to new hosts a real transplantation is obviously involved. The development of the first few series of transplantation tumors was very slow. They exhibited the histologic structure of the original growth and had the same tendency to metastasize to the skeletal muscles. Recently the tumor has grown more rapidly and in a higher percentage of hosts. With this has come a simplification of structure to that of a pure, spindle-celled sarcoma. Fowls of an alien variety (Plymouth Rock) form quite as good hosts for the tumor as those of the sort (Brown Leghorn) in which it was originally found. It has grown in pigeons, rats or mice. The question of the cause of tumor is not taken up. It has been found to be due to an agent which will pass through Berkefeld filters. The growth is quite distinct in its characters from the other two transplantable neoplasms of the fowl (a spindle-celled sarcoma, an osteochondrosarcoma) which have such a cause. No growth like it has been observed among the forty-three spontaneous tumors of the fowl that have come under the authors' observation.

21. **Production of Experimental Nephritis.**—The repeated injection of small doses of horse serum and egg-white in dogs, cats, rabbits and guinea-pigs that have been sensitized to these proteins, has been found by Longcope to cause injury to the cells of various organs and tissues with resulting inflammatory reactions. The changes are especially marked after intraperitoneal injections in the peritoneum and after intravenous injections in the livers of rabbits and cats, and in the myocardium and kidneys of all groups of animals. In dogs and rabbits, especially, there develops a well marked nephritis characterized by degeneration and necrosis of the epithelium of the loops of Henle, of the collecting tubules, and less frequently of the convoluted tubules. This is accompanied by an extensive small round-cell infiltration of the interstitial tissue and later the formation of connective tissue. Together with these changes there are acute and chronic alterations in the glomeruli of all groups of animals. Egg-white in large doses is itself injurious to the kidney of animals, but this slight primary toxicity is probably greatly enhanced through previous sensitization of the animal.

### Wisconsin Medical Journal, Milwaukee

*November, XII, No. 6, pp. 171-210*

25 *Intraspinous Medication in Paresis and Tabes. W. F. Lorenz, Mendota.
26 *Effects of Athletic Sports on Heart. C. R. Bardeen, Madison.
27 Traumatic Neurasthenia and Malingering. C. H. Lemon, Milwaukee.
28 Fracture of Skull. L. M. Warfield, Milwaukee.
29 Practically Bloodless Tonsillectomy. H. B. Hitz, Milwaukee.

25 and 26.—Abstracted in THE JOURNAL, November 1, pp. 1656 and 1657.

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## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### Journal of Pathology and Bacteriology, London

*October, XVIII, No. 2, pp. 149-305*

1 Studies in Paleopathology in Egypt. M. A. Ruffer.
2 *Lipoid Anaphylaxis. F. P. Wilson.
3 *Cytology and Bacteriology of Condensed Milks. F. W. Andrewes.
4 Lipoids of Ancient Egyptian Brains. W. Mair.
5 Preparation and Saponification of Cholesteryl Esters. W. Mair.
6 Comparative Anatomy of Bulbus Cordis, with Special Reference to Abnormal Positions of Great Vessels in Human Heart. J. I. Robertson.
7 Four Cases of Congenital Deformity of Heart due to Anomalous Mechanical Influences in Malformed Fetus. J. I. Robertson.
8 Summary of Blood-Parasites of British Sea-Fish. H. Henry.
9 Intracorpuscular Parasite in Blood of Cottus Bubalis and Cottus Scorpius. H. Henry.
10 New Hemosporidian from Scomber Scomber, the Common Mackerel. H. Henry.
11 Hemogregarine and Leukocytozoon from Gadus Eglefinus. H. Henry.
12 Granule Shedding of Hemogregarina Simondi. H. Henry.
13 Consideration of Infective Granule in Life-History of Protist Organisms. H. Henry.
14 *Arterial Lesions Associated with Rheumatic Fever. O. Klotz.
15 Estimation of Complement and Amboceptor. J. O. W. Barratt.
16 *Hepatic Insufficiency as Estimated from Nitrogen Partition of Urine. W. MacAdam.

2. **Lipoid Anaphylaxis.**—Attempts were made by Wilson to sensitize guinea-pigs to lipoids of varying chemical and biochemical properties extracted from rabbits' livers. The results were negative. Lipoids extracted from egg-yolk in a similar manner, and which differed considerably from the liver lipoids, also failed to produce anaphylaxis. Some doubtful evidence was obtained that a pure lipoid from one source might sensitize an animal to a lipoid of different origin. Dried liver substance and dried egg-yolk do not sensitize to lipoids derived from these substances. Lipoids from yolk of egg sensitize animals to dried liver substance, but liver lipoids will not sensitize to dried egg-yolk. Pure lipoids from any substance will sensitize an animal to a crude extract of the substance, but repeated injections of pure lipoids do not produce anaphylaxis.

3. **Cytology of Condensed Milks.**—Unsweetened liquid preserved milks have no bacteriology, for, Andrewes says, if they were not sterile they would not keep. The case is very different with sweetened condensed milks. In the examination, by culture, of forty-five samples, forty-three of which were machine-skimmed products, Andrewes found living bacteria in every one. Even a good and popular brand of condensed milk yielded a moderate number of colonies of *Staphylococcus albus*, but of the tins examined, forty-three were cheap machine-skimmed milks. Thirty one samples yielded almost pure cultures of staphylococci, among which *Staphylococcus pyogenes aureus* was conspicuous and often predominant. These samples were almost all from a single foreign country, emanating in tins bearing the labels of three different brands, from one single factory. Andrewes' opinion is that the presence of *Staphylococcus pyogenes aureus* in large numbers in a condensed milk is objectionable and should probably constitute a ground for condemnation, even though the potential harmfulness of such a product is unproven. Efficient pasteurization, before condensation and before the addition of sugar, should prevent the presence of such organisms in the final product, however difficult it may be to destroy them afterward, for in the majority of condensed milks they are absent or but scantily present.

14. **Arterial Lesions in Rheumatic Fever.**—Klotz urges that greater attention be given to the various types of acute aneurysms and their relations to acute rheumatic fever; and further, that the almost constant presence of some inflammatory reaction in the ascending limb of the aorta be recognized as an associated condition in this disease.

16. **Hepatic Insufficiency.**—The estimation of any one element of the nitrogen partition of the urine, Macadam believes, is useless as a guide to hepatic efficiency; their interrelationships have to be considered. After the injection of hydrazin sulphate there is an increased excretion of total nitrogen, as found also in phosphorus poisoning. It is probably due to the disturbance of glycogenic function with the subsequent direct or indirect disintegration of the muscle protein. The increase in amino-acid nitrogen, both absolutely and relatively to the total nitrogen, is the most constant feature of the urinary nitrogen partition during the hepatic disturbance produced by hydrazin. Further, this increase is invariably the earliest abnormality to be detected. After hydrazin injection the urea percentage of the total nitrogen increases, and the ammonia diminishes, slightly in sublethal, markedly in lethal, experiments. Neither acetone nor diacetic acid was detected in the urine during the course of any of the experiments. The excretion of creatinin is found to be practically constant, while there is a large excretion of creatin, which appears to be dependent on impaired glycogenic function exerting its influence on the muscle metabolism, rather than on liver inefficiency, leading to a decrease in the conversion of creatin to creatinin. This seems to be indicated by the increased catabolism of "muscle flesh" as calculated from the output of total creatinin.

### Archives des Maladies de l'App. Digestif, Paris

*VII, No. 9, pp. 481-540*

17 *Hemorrhagic Infarct of the Pancreas from Pylephlebitis. E. Chabrol.
18 Diagnosis and Treatment of Gastric Ulcer. K. Petren.
*No. 10, pp. 541-600*
19 *Intestinal Disturbances Consecutive to Gastro-Enterostomy. A. Mathieu and R. Savignac.

17. **Hemorrhagic Infarct of the Pancreas.**—Chabrol presents evidence to show that infection by way of the blood or from the intestines is always a factor in splenophlebitis with hematemesis, infarct of the intestine from mesenteric thrombosis, and infarct of the pancreas from thrombophlebitis.

19. **Intestinal Disturbances from Abnormally Rapid Evacuation of the Stomach.**—Mathieu and Savignac review eleven cases in which more or less serious bowel trouble followed a gastro-enterostomy; the stomach content was passed along through the new outlet before there had been time for the gastric juice to act on it properly. In some cases there was intermittent or continuous diarrhea, sometimes extremely rebellious; in others there were discomfort and pain after meals, resembling the syndrome with gastroptosis. Roentgenoscopy will exclude a fistula between the stomach and the colon, incomplete stenosis of the small intestine and ulcer in the jejunum, which the symptoms suggest. The surgeon should aim to make the gastro-enterostomy continent so that it will retain the stomach content for the normal period. When this has not been accomplished, the patient should restrict his diet to bland foods leaving little waste, and the meals should be small. The soft diet should be supplemented by some preparation of opium, and by hydrochloric acid and gastric juice. Reclining during the period of discomfort, and wearing a girdle to help support the sagging organs are also useful when the intestine becomes distended and heavy and drags on the abdominal plexuses.

### Lyon Médical, Lyons

*November 9, XLV, No. 45, pp. 749-780*

20 *Amyotrophic Tabes. Drey and Malespine.

20. **Amyotrophic Tabes.**—This article discusses a form of tabes in which the chief symptom is a comparatively rapid and progressive atrophy of the muscles due to an extension of the pathologic process to the anterior roots. The picture resembles that of polyneuritis more than that of tabes. The classic symptoms of tabes have to be carefully looked for in differential diagnosis.

### Presse Médicale, Paris

*November 15, XX, No. 93, pp. 929-940*

21 *Pathogenesis of Cholelithiasis. A. Chauffard.
22 Vaccination against Typhoid at Tunis. C. Nicolle and others.
*November 19, No. 94, pp. 941-948*
23 Nodose Erythema with Tubercle Bacilli in the Blood-Stream. L. Landouzy.
24 Hernia plus Mesenteric Cyst. P. Lecène.

21. **Pathogenesis of Gall-Stones.**—Chauffard comments on recent research by Grigaut, published in his thesis last summer under the title the "Cycle of Cholesterinemia." The work was done in Chauffard's laboratory and apparently demonstrates that when there is deficiency in the production of bile salts, the cholesterin is not held properly in solution and hence it is retained in the serum. The excess of cholesterin in the blood causes part to drop out at points favoring sedimentation, especially in the gall-bladder. The primal trouble is thus an insufficiency on the part of the liver. Whatever the cause of this liver disturbance, whether it is due to over-eating, too sedentary life, obesity, pregnancy or inherited taint, treatment should aim to restore normal functioning or supplement by administration of bile salts the lacking elements in the bile.

### Berliner klinische Wochenschrift

*November 17, L, No. 46, pp. 2121-2168*

25 *The Red Bone Marrow in the Femur. (Die Verbreitung des rothen Knochenmarkes im Oberschenkel des Menschen.) E. Hedinger.
26 *Alimentary Fat in the Myocardium. C. Wegelin.
27 Blood-Findings in Lymphogranulomatosis; Nine Cases. O. Steiger.
28 Some Recent Research on the Physiology of Digestion and Metabolism. (Darmgärungen; Energieverbrauch bei Müstung, Wachstum und Eibildung.) N. Zuntz.
29 *Diabetic Coma. L. Blum.
30 *Diathermia in Leprosy. P. Unna.
31 *Intussusception in Infants. (Ueber die sogen. Invaginatio ileocoecalis.) F. Lotsch.
32 Importance for Psychiatry of Jodl's System of Psychology. H. Marcuse.

25. **The Red Bone Marrow in the Femur.**—Hedinger has examined over a thousand cadavers to determine the distribution of the red marrow in the bones, especially in the femur, and has recorded data in five hundred, including forty-four cases of sudden death from suicide or accident. His findings conflict with the statements in the text-books.

26. **Alimentary Fat in the Myocardium.**—Wegelin found fat in the heart muscle in a previously robust insane young man who died in an accident, and also in an infant cadaver. The fat in the myocardium in these cases must be accepted as a physiologic phenomenon. This assumption is corroborated by the findings in his extensive research on white rats and other animals. They all confirm the fact that when fat is taken in the diet there are liable to be deposits in the myocardium without signs of degeneration.

29. **Diabetic Coma.**—Blum discusses the three forms of coma, the cardiovascular, the form with dyspnea and the form in which the dyspnea type merges into the cardiovascular type. The blood-pressure is not always subnormal at first. In regard to the ocular tension, he says that the loss of water is not sufficient alone to explain the reduction; the salts must be involved also. Under treatment with large doses of alkali the ocular tension is liable to return to normal. This reduction in ocular tension may occur outside of coma, as in a recent case of acute fatal gastro-intestinal disease. The ocular tension was 4 or 5 mm. fourteen hours before death, but there was no tendency to coma. The loss of water in the profuse diarrhea was undoubtedly responsible for the change in the ocular tension.

Blum's experience has been that stimulants and epinephrin are unable to arrest the progressive weakness of the circulation in coma. This shows that they do not influence the cause of the vascular trouble. Improvement follows only when the acid becomes neutralized by sufficient intake of an alkali. He gives sodium bicarbonate or citrate, 5 or 10 gm. by the mouth, every half hour until the urine gives an alkaline reaction. The alkali is taken in carbonated water or wine or in capsules which pass through the stomach unmodified. In case of a tendency to diarrhea, he adds equal parts calcium carbonate to the sodium bicarbonate or citrate, up to a total of 250 gm. of the mixture in twenty-four hours. He has never witnessed any benefit from the alkali given by the rectum. Untoward by-effects are liable to follow intravenous infusion of the alkali unless it is given in the form of solutions of the sesquicarbonate, obtained by boiling sodium bicarbonate. The concentration should not go above that corresponding to a 6 per cent. solution of sodium bicarbonate. The infusion should not be repeated unless profuse diuresis guarantees that part of the sodium salt has been eliminated. By heeding these factors, intravenous infusion is practicable. He does not think it advisable to keep up the alkali indefinitely, on account of injury to the stomach. When coma is once installed, a purge is of little use, but great improvement is liable to follow a purge in the precoma stage.

30. **Diathermia in the Nervous Form of Leprosy.**—Unna has applied in seven cases this method for inducing high temperatures in the depths of the tissues, and states that it has a remarkable effect in arresting the pains at once. With continued applications permanent results can be attained, deep infiltrations being absorbed. It also loosens up the tissues, rendering them more amenable to general measures.

31. **Intussusception in Infants.**—Lotsch reports the recovery of two infants out of twelve operated on for ileocecal invagination. In only five cases was the interval less than twelve hours before the operation and the two children who recovered were in this group. In six additional cases of invagination the trouble was in the small intestine and the children were

older; this group includes also three adults. Attempts at manual reduction and reduction by high injections have little prospect of success. No time should be wasted on them, he insists, as the only chance for recovery is in an early operation.

### Medizinische Klinik, Berlin

*November 16, IX, No. 46, pp. 1879-1920*

33 Chemotherapy of Tuberculosis. C. Bruck.
34 *Diagnosis and Treatment of Hematuria. E. Portner.
35 The Food of the Japanese. K. Suto.
36 *Operative Treatment of Detachment of Retina. (Netzhautablösung.) Elschnig.
37 Combined Tincture of Iodin and Ichthyol Treatment of Furunculosis. F. Berger.
38 **Physiology* and Treatment of Diseased Tonsils. H. Röder.
39 *Perforated Ear Drum May Be Responsible for Sudden Death in Water. A. Güttich.
40 Possible Adaptation to Function of Severely Crippled Limb. (Beitrag zur Gebrauchsfähigkeit schwer geschädigter Glieder bei Nicht Unfallverletzten.) A. Weinert.
41 Physical Measures in Treatment of Skin Diseases. E. Saalfeld.
42 Etiology of Molluscum Contagiosum. B. Lipschütz.
43 Technic for the Wassermann Test. (Zur Frage des verfeinerten Wassermann mit bes. Berücksichtigung der sogen. Paradoxen Sera.) F. Graetz. Commenced in No. 45.

34. **Hematuria.**—Portner insists that the cystoscope is indispensable in examining a case of hematuria, and there should be no delay in applying it. The only exceptions are with acute gonorrheal cystitis and hypertrophy of the prostate. He discusses the interpretation of the cystoscope findings, warning that both kidneys may be involved, and also that the discoloration of the urine may be due to hemoglobinuria. To exclude chronic nephritis, the urine should be examined after exercise and during bed-rest. If no cause for the hematuria can be discovered, the bleeding and painful kidney should be opened up in six or eight weeks at latest, as the trouble may be a tumor. Bleeding from instrumental injury generally stops of itself but infection should be warded off with hexamethylenamin and copious drinking. If there is much hemorrhage, a retention catheter may help to arrest it. Slight bleeding from the posterior urethra generally occurs with a few drops of pure blood at the end of micturition; gonorrhea and tuberculosis of the bladder may show hematuria of this kind. With profuse hemorrhage in the posterior urethra the blood runs into the bladder and mixes with the urine. Blood in the sperma is usually a sign of gonorrheal inflammation of the seminal vesicles, but it may be an early sign of a tuberculous process or of cancer of the prostate. If the prostate is found enlarged in a case of hematuria without pain, the prostate is generally responsible for it, and if the hemorrhage recurs repeatedly, malignant disease may be assumed unless the cystoscope reveals some cause in the bladder. The hemorrhage with calculi in bladder or kidney is harmless unless infection is superposed, but the slightest suspicion of cancer requires operative treatment. It is a comparatively recent discovery that hemorrhage may occur with chronic nephritis alone. The operation undertaken to remove the assumed calculus or tumor cured the tendency to hemorrhage and taught that nephrectomy is the only means to remove danger from this source. Hematuria with an incipient tuberculous process in the kidney is like hemoptysis in early pulmonary tuberculosis, important and useful as it permits treatment in time to be effectual.

36. **Operative Treatment of Detachment of the Retina.**—Elschnig states that he has punctured and injected 1 c.c. of the patient's own serum or salt solution in twenty cases; on both eyes in two of them. By aspirating out part of the fluid that has accumulated beneath the retina and, practically simultaneously through another cannula, injecting fluid in front of the retina to push it back into its normal place, approximately normal conditions can be restored. Seven of the eyes were much improved but the condition was aggravated in ten. In one case a mycotic process developed, finally destroying both eyes. He has never had a complete cure, being less fortunate in this than Birch-Hirschfeld. But the method may arrest the trouble and save partial vision at least, when under less vigorous measures the eye is inevitably doomed.

38. **Pathologic Importance of the Tonsils.**—Röder declares that if the physician is not content with a cursory inspection of the apparently intact tonsils, but insists on lifting the anterior palatine arch and examining all the recesses, and squeezes the tonsils, drawn out by a suction apparatus, he will become convinced that the lymphatic vessels at the entrance to the throat take a leading part in the functioning of the organism as a whole. Not only joint troubles but a number of other local and general disturbances improve after a housecleaning of the tonsils. This not only clears away disease-breeding detritus, etc., but it starts up a healthy circulation of lymph through the parts. Fresh lymph pours into the tonsils, and the data presented testify that a strong current of lymph setting into the tonsils is an important element for health. When this current becomes obstructed by detritus, etc., we have trouble at once. In one case of incipient measles he applied the suction apparatus to the apparently sound tonsils and aspirated considerable pus; in a few minutes the swelling of the face and eyes began to go down. Cleansing out the tonsils may cure a persisting bad odor of the breath. Under normal conditions the act of swallowing squeezes out the secretions and detritus in the tonsils; the bad odor is thus most evident fasting.

This conception of the important part played by the tonsils necessarily forbids routine tonsillectomy. Treatment must aim to cure the tendency to chronic inflammation and restore the functioning of the tonsils. He applies the tonsil suction apparatus with moist cotton in the spoon blades. Local applications of tincture of iodin, etc., are irritating and do no good. The general circulation of the lymph is stimulated with brine baths, inunctions and internal administration of cod liver oil, and iodin or 1 per thousand mercuric cyanid by the drop, every hour or two. He has never found it necessary to resort to the knife, although this might be indicated if the tonsil had hardened so that the plugs of pus could not be forced out. Röthlisberger's massage sometimes proves useful, especially when the effect is enhanced by pressure from without on the massaging finger. In conclusion Röder reiterates that by this means the physician's own knowledge and skill relieve the patient of his pains and disease without the necessity for drugs or for an operating specialist or chemicals.

39. **Sudden Death in Bathing.**—Güttich describes the serious symptoms which follow irritation of the vestibular apparatus with cold water poured into an ear with perforated drum. Not only nystagmus but vertigo, vomiting and general collapse have been observed. Even with a sound membrane, these symptoms may develop if water at a temperature of 10 C. is used for the test. These facts amply explain many cases of sudden death in bathing. The water penetrates through the perforation, or the force of the water in diving, or a wave dashing against the ear may burst a weakened tympanic membrane. Passow has related cases of this kind. There may be a temperature irritation in the internal ear just from the coldness of the water alone, acting on the exterior of the body. The consequent irresistible vomiting or collapse under the water might easily cause death. A meal not long before renders the vomiting reflex easier to elicit. The reaction as a whole is liable to be proportional to the difference of temperature between the water and the air. Persons with perforated membrane should be warned against diving and bathing in too cold water; they should plug the ear with oiled cotton. The ears of a drowned person should be examined for perforation of the membrane.

### Münchener medizinische Wochenschrift

*November 18, LX, No. 46, pp. 2553-2600*

44 *Esophageal* Cardiogram. (Registrierung des Druckes im rechten Vorhof und Wert des oesophagealen Kardiogramms für die Erklärung des Jugularvenenpulses.) A. Weber.
45 Experimental *Production* of Concrements. (Experimentell erzeugte Ablagerungen von Cholesterinestern und Anhäufungen von Xanthomazellen im subkutanen Bindegewebe des Kaninchens.) N. Anitschkow.
46 *Desiccated Antitoxin and Serums. (V[illegible] lyaxiegefahr durch eine neue Art de[illegible] Injektionsfertiges Trockenserum.) [illegible]
47 *Obliterating Arthritis. E. Veiel.
48 Practical Identity of Radium and Roentgen Rays. A. Pagenstecher.

49 *Epinephrin in Recurring Osteomalacia. H. v. Salis.
50 *Tonic Neck Reflexes in Man. R. Magnus and A. de Kleijn.
51 Rumination in Three Generations. (Ausserordentlicher Fall von menschlichem Wiederkauen.) v. Gulat-Wellenburg.
52 *Lymphoblast and Myeloblast Leukemia. G. Herxheimer. Commenced in No. 45.
53 *The High School for Physicians and Patients. XI. M. Nassauer.

46. **Desiccated Antitoxin and Serums.**—Eichholz states that experimental research has apparently demonstrated that a suspension of desiccated serum in olive oil seems to retain all the therapeutic possibilities unimpaired while the serum is absorbed so much more slowly and gradually that there does not seem to be any danger of anaphylaxis or serum sickness. The desiccated serum naturally cannot be used where speedy action is wanted, but it may be found useful in prophylaxis and in cases in which there are reasons for anticipating trouble from anaphylaxis.

47. **Obliterating Arteritis.**—Veiel reports two new cases similar to those published by Erb in which young men developed intermittent claudication after a crushing injury or long chilling or inflammation causing obliterating inflammation in the artery of the foot or leg. In one of his cases the claudication disturbances came on spasmodically even when the patient was at rest. There is nothing to suggest arteriosclerosis in either case, but the nervous system in all such cases seems to have been predisposed by abuse of tobacco.

49. **Epinephrin Treatment of Recurring Osteomalacia.**—Salis calls attention to the remarkable efficacy of a course of epinephrin, according to Bossi's principles and technic, in the case of a woman of 42 who had had osteomalacia develop during her various pregnancies and recur during the intervals, a martyrdom through sixteen years. None of the usual measures, including castration eleven years before, had given more than transient relief, but under the epinephrin she lost her pains and inability to walk and there was no further local tenderness, so that she is now clinically cured.

50. **Neck Reflexes.**—Magnus and de Kleijn have continued their study of the peculiar tonic reflexes in the limbs to be elicited by turning the head of decerebrized laboratory animals. The same reflexes can be elicited in patients with disease shutting off the brain, and they here report the case of a girl of 9, a total idiot, with no apparent perception of sound or light, blind, deaf and dumb. By turning the child's head over to the right side, the right arm and leg at once straighten out while the left arm and leg become flexed. Turning the head to the left, the left arm and leg stretch out straight while the right arm and leg become flexed. Drawing the child's head over so that the right ear is brought nearer to the shoulder, the right arm and leg relax, while the left arm and leg straighten out; the reverse occurs when the left ear is drawn down to the left shoulder. Lifting and lowering the head do not elicit any appreciable reflexes. The reflexes elicited are permanent, that is, the limbs stay in the position they assume in the reflex movement.

52. **Leukemia Simulating Typhoid Lesions.**—Herxheimer emphasizes that the leukocytes in leukemia are below par to such an extent that they are not able to defend against infections, and hence the leukemic are particularly subject to infectious processes. The gums, the throat, the nose, have often been the seat of infectious processes, and thirty-eight cases are on record in which the infectious processes were located in the intestines, the findings suggesting typhoid or paratyphoid ulceration. This was particularly evident in Herxheimer's three cases of myeloblast leukemia. One of the cases had been labeled typhoid until the blood-count disproved this. The intestinal findings were exactly those of typhoid, but all the tests for typhoid or paratyphoid bacilli proved negative. The ulcerations were in the ileum exclusively and they were evidently the work of the colon bacillus alone. In conclusion he reports a case of lymphatic leukemia on which became superposed a myeloblast leukemia. The mediastinal tumor, tumefaction of the pancreas and enlargement of the heart were evidently the work of the latter. The patient was a youth of 16 with chronic leukemia; he died from suffocation from the rapidly growing tumor in the mediastinum.

53. **The High School for Physicians and Patients.**—Here Nassauer draws the picture of the lady who goes heavily veiled to the physician's office and complains of heart trouble requiring a thorough examination. It reveals nothing abnormal except possibly a little accelerated heart-beat. A few days later the physician is summoned by telephone early and told to come to her home at 11. He waits till nearly 2, and then apologizes profusely for having been detained. He finds the husband there then and the maids returned from various errands on which they had been sent away in the morning.

Another sketch shows the vagaries of the memory when it comes to paying the physician; the apparent inability of patients to realize or keep count of the number of times they call the physician to their homes; their surprise when they find that it mounts up to such a number of calls when they thought it was only three or four during the whole year at most; the way in which a patient will keep on paying the same small sum which the physician asked years ago, the first time this patient consulted him, when the patient was in almost indigent circumstances. Now that fortune has smiled on her she never thinks of increasing the office fee, and yet, this very patient, in the anteroom is liable to expatiate on the physician's high charges and perhaps drive away some one waiting to consult him but not able to pay the high fees he understands from the woman's remarks are the custom at this office. Nassauer also sketches the richly dressed woman, an old client, and a "very grateful one," as he has saved her life, she realizes, on more than one occasion. At that time she had been an impecunious wage-earner but later married her employer and was now wealthy. Although she often called at his office she never thought of paying him for his services. By keeping up her modest payments to the company in which she had taken out health insurance while employed, she had his services gratis.

### Policlinico, Rome

*November 16, XX, No. 46, pp. 1657-1692*

54 Polymorphous Erythema and Tuberculosis. N. Trulli

### Meditsinskoe Obozrienie, Moscow

*LXXX, No. 13, pp. 107-206*

55 Diuretic Action of Calcium Chlorid in Nephritis. S. S. Nazimoff.
56 Chorio-Epithelioma. V. S. Baraboshkin.

### Hygiea, Stockholm

*October, LXXV, No. 10, pp. 993-1104*

57 *Hypophysis Extracts in Obstetric Practice. (Hypofysextrakt såsom värkbefordrande medel.) W. Gårdlund.
58 *Vaccination against Chicken-Pox. (Om skyddsympning mot varicellæ.) C. A. Kling.

57. **Hypophysis Extract in Obstetric Practice.**—Gårdlund concludes from his experience with hypophysis extracts that they may prove useful oxytocics but they cannot always be relied on as the effect seems to depend on the individual response of the uterine musculature. This varies in a wide range. In the extremely susceptible actual tetany of the uterus may be induced.

58. **Vaccination against Varicella.**—This article is the same as the one reviewed in abstract 36, p. 2277, here accompanied by colored plates showing the positive findings on the arm after vaccination.

### Ugeskrift for Læger, Copenhagen

*November 6, LXXV, No. 45, pp. 1777-1814*

59 *Radiotherapy in Gynecology. A. Maag.
60 Appendix as Sole Content of Femoral Hernia; Two Cases. I. U. Gerdes.

59. **Radiotherapy in Gynecology.**—Maag reviews a number of articles on this subject and compares the outcome of treatment in over a thousand cases, tabulating further the views of the different authors in regard to indications and contra-indications. His conclusions are in favor of refraining from operative treatment of uterine myoma as Roentgen treatment can cause the myoma to retrogress and the patient does not require hospital care and the treatment is painless. The data presented seem to show also that Roentgen treatment is the sovereign measure for all purely climacteric disturbances.

# JOURNALS INDEXED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT
## JULY-DECEMBER, 1913

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The following journals have been indexed in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers and members in the United States for a period not exceeding three days. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

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American Journal of Anatomy. Bi-m. $5. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $3. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Insanity. Q. $5. Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M. $5. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Diseases of Women and Children. M. $5. Wood & Co., 51 5th Ave., New York City.
American Journal of Orthopedic Surgery. Q. $3. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia.
American Journal of Public Health. M. $2. 289 4th Ave., New York City.
American Journal of Tropical Diseases and Preventive Medicine. M. $2. P. O. Drawer 602, New Orleans, La.
Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
*Annales de l'Institut Pasteur. M. 20 francs. Paris.
Annales de médecine et chirurgie infantiles. Semi-m. 12 francs. Paris.
Annals of Ophthalmology. Q. $4. Jones H. Parker, Publisher, Mermod-Jaccard Bldg., St. Louis.
Annals of Surgery. M. $5 J. B. Lippincott Co., 227 S. 6th St., Philadelphia.
Annals of Tropical Medicine and Parasitology. Q. $5. Liverpool.
*Archiv für Gynäkologie. Irregular. Price varies. Berlin.
*Archiv für Kinderheilkunde. Irregular. 15 marks. Stuttgart.
Archiv für klinische Chirurgie. Irregular. Price varies. Berlin.
Archiv für Verdauungs-Krankheiten. Bi-m. 24 marks. Berlin.
Archives of Diagnosis. Q. $1. 250 W. 73d St., New York City.
Archives générales de chirurgie. M. 26 francs. Paris.
Archives générales de médecine. M. 18 francs. Paris.
Archives of Internal Medicine. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.
*Archives internationales de chirurgie. Irregular. 30 francs. Ghent.
*Archives des maladies de l'appareil digestif et de la nutrition. M. 14 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. 17 francs. Paris.
*Archives de médecine des enfants. M. 18 francs. Paris.
Archives mensuelles d'obstétrique et de gynécologie. M. 25 francs. Paris.
Archives of Ophthalmology. Bi-m. $5. G. P. Putnam's Sons, 27 W. 23d St., New York City.
Archives of Pediatrics. M. $3. E. B. Treat & Co., 241 W. 23d St., New York City.
Australasian Medical Gazette. W. $5. Sydney.
*Beiträge zur Geburtshilfe und Gynaekologie. Irregular. Price varies. Leipsic.
Beiträge zur klinik der Tuberkulose. Irregular. 16 marks. Würzburg.
*Beiträge zur klinischen Chirurgie. M. Price varies. Tübingen.
Berliner klinische Wochenschrift. W. 24 marks. Berlin.
Boston Medical and Surgical Journal. W. $5. 101 Tremont St., Boston.
Brain: A Journal of Neurology. Irregular. $4. London.
Brazil Medico. W. 20 milreis. Rio de Janeiro.
Bristol Medico-Chirurgical Journal. Bi-m. $3.
British Journal of Children's Diseases. M. $5. London.
British Medical Journal. W. $8.50. London.
Bulletin de l'Académie de médecine. W. 20 francs. Paris.
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This is an index not only to the reading matter in The Journal, but also to original articles in the principal medical periodicals of this and other countries. The reading matter appearing in The Journal is distinguished by the use of black-faced numerals.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in The Journal.

This is a subject index and one should, therefore, look for the chief word, with the following exceptions: "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association."

All matter is indexed under the most important word of the heading used in The Journal, and also under the subject heading. For instance, abscess of the brain will be found under "abscess," as well as under "brain." Such titles as "ocular manifestations, etc." have been indexed under "Eye." Cross references have been liberally used.

The figures in parentheses refer to the paragraph, the number following to the page in The Journal.

ABSCESS, temporosphenoidal, with meningeal symptoms, ***1209**

This reference is to an original article in The Journal, as shown both by the star and by the black-faced numerals indicating the page.

AARON and Rosenbach signs for appendicitis, **2001**

This reference, as indicated by the black-faced figures, is also in The Journal, and on turning to page 2001 we find an answer to a question in the Department of Queries and Minor Notes.

ABSCESS, liver, emetine in (5) **1936**

In this reference, the (5) indicates that the article is in the Current Literature Department and the fact that the page number is in black-faced type shows that the article is abstracted and discussed in The Journal. Turning to page 1936, we find (5) refers to an article by R. L. Spittel in the *British Medical Journal*, October 25.

ABBOTT'S method of treating scoliosis, (104) 513

The fact that in this last reference the page is given in ordinary type indicates that only the title of the article is given. Turning to page 513 we find that the numeral (104) refers to a paper on that subject by S. Kleinberg which appeared in *Surgery, Gynecology and Obstetrics*, July.

In the Author's Index are the names of the authors of articles which have appeared in The Journal of the American Medical Association and of articles that have been listed from week to week in the Department of Current Medical Literature as having appeared in other journals. The black-faced numerals indicate that the article is in The Journal, either in full or in abstract. The star (*) preceding the page number, indicates an original article.

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## SOCIETIES

*A.—Association.*
*Acad.—Academy.*
*Am.—America, American.*
*Coll.—College.*
*Conf.—Conference.*
*Cong.—Congress.*
*Conv.—Convention.*
*Dist.—District.*
*Hosp.—Hospital.*
*Internat.—International.*
*M.—Medical, Medicine.*
*Nat.—National.*
*Phar.—Pharmaceutical.*
*Phys.—Physicians.*
*Ry.—Railway.*
*S.—Society.*
*Surg.—Surgical, Surgery, Surgeons.*

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